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CLINICAL LECTURE.

*ON MORVAN'S DISEASE.**

BY PROF. J. M. CHARCOT.

GENTLEMEN: We shall study to-day one in particular among several different affections, and seek to distinguish the features in which they differ. For the maladies to which I allude, all possess one character in common; they all give rise to serious and symmetrically arranged lesions of the fingers. These lesions terminate in mutilation in consequence of the destruction, through different processes, of the phalanges, and sometimes of the entire digit. The diseases to which I am about to call your attention belong to different nosological categories.

The first of which I shall speak is a mutilating form of scleroderma which attacks the fingers, the sclerodactylie of M. Ball.

In the next place, I shall mention lepra of that variety known as anæsthetic leprosy, the lepra mutilans of certain authors.

Thirdly, in this connection, our attention is claimed by the affection termed symmetrical gangrene of the extremities, or Raynaud's disease, which attacks the fingers, great toes, nose, ears, etc. I shall merely indicate this disorder in passing, for reasons which I will explain to you subsequently.

Finally, I shall treat more especially of a disorder which has only been recognized within the last seven years, and the individuality of which is, in fact, still denied by some writers. I refer to that morbid process first described by Dr. Morvan, of Lannilis, who gave it the designation of "analgesic paresis with whitlow of the upper extremities," though it is now generally referred to simply as Morvan's disease. The mutilation is accomplished by the whitlows which successively, in greater or less number, invade the fingers.

In thus introducing sclerodactylie and mutilating leprosy, and not limiting my remarks to the single subject of Morvan's disease, I do so that we may the more distinctly recognize, by contrast, the characters of the last-named affection. You are, indeed, aware, gentlemen, that this method by contrast is the one which I by preference employ in my demonstrations. By contrasting and opposing the features of different diseases, we are enabled to fix the distinctive types of each more clearly in our minds. I shall once more employ this method by bringing before you, in addition to several examples of mutilating disease of the hands, a typical case of Morvan's disease, kindly placed at my disposal by my colleague, M. Hanot. The presentation of Morvan's disease is peculiarly opportune at this time, following our recent studies of syringomyelia. These two maladies bear a certain resemblance to each other, and by some they have been, in my opinion erroneously, confounded.

But before considering our chief topic let me first say something of those other disorders which lead to deformity of the hand and fingers, and I will begin with sclerodactylie.

Scleroderma of the fingers, to use the designation of Professor Ball, who has made it the subject of an important essay, is a variety of the disease described by Alibert, and, later, in 1845, by Thirial. It is the sclerema of adults

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with this peculiarity, that it is limited to the fingers and the face. In 1871 I called the attention of the Biological Society to this manifestation, to the mutilations which may result from it, and the mechanism by which they are produced. I have the opportunity to-day of showing you an excellent example.

The patient now brought before you is 42 years of age. At the age of 25 years she suffered from an attack of acute articular rheumatism. She had, however, already noticed, for two years prior to this illness, that her fingers were becoming abnormally sensitive. Soon their extremities became red and then swollen. At last some bullæ appeared, which after awhile burst and then dried up little by little; the skin, at first swollen, became atrophied, smooth, and attached to the subjacent phalangeal bones. The nails, also, became deformed and atrophied. The bones, by a special mechanism of absorption became, in their turn, atrophied, and the terminal phalanx disappeared. No pieces of bone were ever discharged. Such discharge may occur, as M. Ohier has demonstrated in his thesis published in 1883. But it is altogether exceptional, and, so to speak, accidental.

The lesions have thus pursued a gradual march of invasion, and you will observe that in this woman the deformities are perfectly symmetrical, the four fingers of each hand being involved. They have entirely lost their primitive form, and have become cone-shaped and slender. The terminal phalanges are almost completely gone, and the skin which covers the middle phalanges is smooth, tense, and adherent to the bone. The finger is tipped with a little, almost formless, horny mass, which represents the last trace of an atrophied and deformed nail. Such are, in a few words, the deformities to which sclerodema of the fingers gives rise. I have known this woman for several years, and I will add that at no period has there been any anæsthesia or analgesia, and that tactile sense is perfect

Now, what is the cause of these deformities? Do they depend upon a primitive lesion of the nervous centres? It has been asserted that we have to deal here with a peripheral neuritis. But alteration of the nerves of parts which are the seat of a chronic, sclerotic inflammation of such intensity should be expected, and should not surprise us when encountered. There is no reason, however, to believe that this is the primordial cause of the disease. On the other hand, Pierret maintains that there is no affection of the spinal cord, while he calls attention to the fatty atrophy of the phalanges. In short, if any alterations of the nerve-centres exist, which seems possible in view of the symmetry of the lesions and the course of the disease, they remain as yet unknown.

Let us confine ourselves, gentlemen, to the purely clinical side of the question. Three phenomena are characteristic here: 1, the absence of disorder of any of the forms of sensibility; 2, the nature of the deformity of the fingers; 3, the absence of discharge of pieces of bone. The presence of these characters should be sufficient to preserve you from doubt. But, where doubt might be permissible if the fingers only be regarded, you may find, by examining another part of your patient's body, signs which belong only to scleroderma, and dispel all hesitation. I refer to the sclerodermic mask, which, when present, is a decisive diagnostic sign. This special appearance of the face in scleroderma has been excellently described by Ohier in the work to which I have made allusion. Look at our patient and you will see in what it consists.

The nose is small, thin, and pinched. The eyes are deeply sunk and appear large. The skin around the orbit is notably atrophied, tense, and adherent to the bone. It is the same with the skin covering the forehead, where it is smooth and has scarcely a trace of a wrinkle. The mouth has a singular form; it is a completely straight line across the face. The lips are thin, as if stretched, and are almost destitute of a mucous border. For this reason the lips cannot be entirely closed, and the teeth are always visible behind the little straight slit. As to the remainder of the face, you see that it is depressed below the malar bones, which project abnormally, the skin being thin, smooth, and adherent to the bones, exposing, as it were, the osseous skeleton of the region. At the chin this appearance is very characteristic. Below the chin and upon the neck the skin has become actually too short, and embarrasses the movements of deglutition. Alibert, in his somewhat inflated style, compares this aspect to the face of Niobe changed into a stone by the vindictive Latona. Remember this comparison, if you will, but, at all events, do not forget the sclerodermic mask, which is of capital importance in the diagnosis of the malady.

We come now to lepra. It is exclusively of the anæsthetic variety that I shall speak, and, above all, as it affects the upper extremities, which it paralyzes, atrophies their muscles, abolishes sensibility, and leads to mutilations. However marked by anæsthesia, and however different in appearance from the tubercular form, the two are nevertheless fundamentally identical. They are but forms of one and the same parasitic, infectious disease, produced by the bacillus discovered by Hansen, and studied by Cornil in the lepers of Grenada. Both forms are often co-existent.

It is for us to-day an exotic malady, almost unknown in this country. I say to-day, because formerly, in the Middle Ages, lepers and leper-houses were to be found even in Paris. But, at the present day, in order to find leprosy in France it would be necessary to search the south, in the environs of Nice or at Martigue. In Europe, the only countries in which leprosy is likely to exist are Spain, Portugal, Greece, Turkey, and Norway, in which latter country leper-houses or communities are found, and where the disease is named spedalsked. I will say nothing of Asia (leprosy is a Biblical disease), Africa, or South America, in which it is extremely prevalent. It has been seen in the Salpêtrière by Duchenne (de Boulogne). The sufferers were ignorant of its nature, and it presented itself in them under the form of a muscular atrophy, particularly of the hands.

Let us consider the deformities which this variety of lepra may produce in the extremities, and especially the hands. The atrophy gives rise to the monkey-hand, with flattening of the thenar and hypothenar eminences and the interosseous claw, the lesions generally being symmetrical. A characteristic anæsthesia uniformly affects the different modes of sensibility. Besides, and of special interest in this connection, various trophic disturbances take place in the fingers, thumb, index, great toe. The skin becomes fissured; deep ulcers form and extend until they circumscribe the whole or a part of a finger. This occasions at length, without any pain or reaction, loss of the member, or, perhaps, it is removed by the knife of the surgeon. Finally, less serious troubles, such as cracks, fissures, bullæ, etc., appear upon the hands.

The cause of these alterations is known. Symmetrical leprous neuritis has been studied by Virchow. Sometimes we are able to recognize tumefied nerves, particularly the ulnar. You perceive, therefore, that a distinction is easy between leprosy and scleroderma. I repeat, that in the latter there is no fall of fragments of fingers, but a sort of absorption *in situ* of the constituent elements of those organs. Again, the foreign character of lepra must be remembered. Finally, if you have in scleroderma a sign which certifies the diagnosis, viz., the epidermic mask, you possess no less a specific sign peculiar to leprosy. This is the presence of large spots or leprous maculæ (lepra maculosa) scattered over various parts of the body and designated as morphœa alba or rubra, according to the circumstances of the case.

For these reasons it is not often very difficult to distinguish leprosy from scleroderma of the fingers. We must now learn how to distinguish them both from Morvan's disease.

Gentlemen, before proceeding to the examination of the patient whom I have here, and who is an example, as I believe, of Morvan's group, I think it will be useful to apprise you in a few words of what is known concerning this pathological complexus—I scarcely venture yet to call it disease—from the labors of M. Morvan himself and those of several authors who have followed him in the same path.

And first, a word as to history. M. Morvan, incontestably an excellent observer, physician at Lannilis, in Brittany, already known by an interesting contribution to the history of the affection termed pachydermic cachexia, or myxœdema, has published, between 1883 and 1889, no less than five memoirs upon the subject of painless whitlow. These papers are all contained in the Gazette hebdomadaire. M. Morvan has laid down from the beginning the clinical type which now bears his name, and has defended it vigorously—*unguibus et rostro*—against the numerous attempts which have been made for its dismemberment.

Among other writings upon the same subject I will mention one by M. Broca (Soc. Clin., 1885, and Ann. de Dermat. et le Syphilog., 1885), and a memoir by M. Prouff, also a Breton, who has reported a very well studied case (Gaz. hebd., 1887). The autopsy of this patient was subsequently made by M. Gombault (Soc. Méd. des Hôp., 1889), and although, in certain respects, incomplete from circumstances beyond the control of the author, it suffices, nevertheless, to demonstrate that

"pareso-analgesia with whitlow" should not, without further discussion, be identified with syringomyelia. This fusion has been made, in fact, by M. Roth, who, in his work upon medullary gliomatosis (Archiv. de Neurol, 1889), compares the two maladies and inclines to look upon them as one and the same affection.

Next come the observation of M. Hanot relative to the patient whom I am about to show you to-day, the article of Monod and Reboul (Arch. de méd., 1888), and the thesis of Oger de Spéville, inspired by M. Hanot. The last-named writer continues the history of the case previously reported by his master, and adds to it an account of 8 cases gathered from different sources. Finally, quite lately Heckel has reported a case from the clinic of Jürgensen, of Tübingen (Berlin klin. Wochenschr. and Rif. Med., 1889).

All these writers, gentlemen, have but followed M. Morvan, have changed nothing nor added anything essential to his description, and have, in general, only furnished confirmatory documents. It is from him, therefore, that I shall draw our clinical description, only remarking by the way that certain features of the account have been slightly modified during the period of six years between 1883 and 1889.

The first memoir of M. Morvan is entitled "Analgesic Paresis, with Whitlow of the Upper Extremities." From this, which contained the important discovery of analgesia, I quote literally: "The disease which we intend to describe consists in paresis with analgesia of the upper extremities, limited at first to one side, generally passing after awhile to the other, and always terminating in the production of one or more whitlows. The first case which came under our notice occurred many years ago, as many probably as twenty-five or thirty years. The patient was a man of 60, who presented himself with a whitlow upon one of his fingers. We perceived that the ungual phalanx was necrosed, and proposed to make an incision in order that the dead bone might come away. As the man did not receive the proposal very warmly, we added that the incision would be quick as lightning and that he would not have time to suffer. We then proceeded to make a large and free opening. What was our surprise to see the calm of that brave man, who had not been exactly a hero in our eyes, but who never flinched! Not a groan! He had seemed a wooden man had the case been otherwise, but he had felt no pain; he had not suffered at all, he assured us. We had fallen for the first time upon one of those cases of analgesic paralysis of the upper extremities which form the subject of our memoir. We then took a pin and thrust it without awakening pain into various points upon the hand and forearm (which was swollen)."

Such, gentlemen, was the origin of the researches of M. Morvan. We come now to the general aspect of the disease as he has portrayed it. The three predominant phenomena are: 1, pain from the beginning; 2, a paresis with analgesia of one side, then of the other; 3, at last, the development of whitlows, which are, therefore, consecutive to primitive symptoms. Sometimes paresis and analgesia precede pain. Finally, other trophic difficulties often supervene, and to the consideration of these we shall soon return. Such is the initial description. But, in succeeding writings, M. Morvan modified somewhat the preceding picture, and was led to admit the existence of atypical cases in which the whitlows were painful or in which paresis or analgesia was absent. In these cases the sole constant symptom was whitlow with the trophic troubles to which I have just referred, although these were also lacking in some cases.

Let us for the moment occupy ourselves with the typical case only, and study the principal symptoms with some detail. We learn, first, that pain generally precedes the appearance of paresis and analgesia. These pains are neuralgiform. Then comes paresis, with more or less accentuated muscular atrophy, involving the hand and forearm. Finally, there is analgesia, the study of which is here, above all, important. It invades usually the hand, forearm, and a part of the arm, though occasionally it extends to the whole arm and even to other parts of the body. It is at once an analgesia and an anæsthesia, affecting the sense of pain, touch, and temperature. M. Morvan makes this express assertion in his fifth memoir, which is devoted to the defense of the autonomy of the group of his discovery against the attempts which had been made to assimilate it to syringomyelia. That special dissociation of sensibility met with in the latter malady, of which it is characteristic, is never, he declares, found in the whitlow of Morvan.

You know, gentlemen, after our recent lec-

tures, in what that dissociation of anæsthesia peculiar to syringomyelia consists. The sensation of touch is preserved, but pain is not otherwise felt than as contact, while a more or less complete and absolute anæsthesia exists as regards the sensations of heat and cold. In a word, there is no anæsthesia in syringomyelia, but only relative analgesia, and especially thermo-anæsthesia. This is not the case in Morvan's disease.

The third of the symptoms which remains for us to study is the whitlow. At first view this appears to be an ordinary whitlow, beginning, like the latter, with redness, heat, and swelling. But it differs in being always a grave manifestation, followed by necrosis and ending in the destruction of one or more of the phalangeal segments. Hence the mutilations are often grotesque, and in many cases are altogether characteristic. The lower extremities, I may say in passing, are rarely attacked. Furthermore, it is a multiple whitlow, sometimes involving all or nearly all the fingers. Thus, in the observation of Prouff 8 whitlows occurred, 9 in one of Morvan's cases, and 7 in Jürgensen's patient. These are, it is true, extreme cases, and such a multiplicity is not the rule. But cases in which 2, 3, or even 6 whitlows develop are common.

Again, these whitlows are of successive development. They do not generally manifest themselves simultaneously, and may follow each other through a long period of years. In Prouff's case, for instance, which, I may remark in parenthesis, is one of the best and most complete reports that we possess, the whitlows succeeded each other during a period of more than forty years, from the twelfth to the fifty-sixth year of age. In Jürgensen's patient, they continued to develop for ten years, from the twenty-eighth to the thirty-eighth year of age.

Finally, in the great majority of cases it is an indolent whitlow. But on this point it is necessary to make certain reserves. In some patients, ours among the number, as you will see, the earlier whitlows may be painful, while the succeeding ones are painless. This fact should be known, so that no one should be led to reject a diagnosis of Morvan's disease solely because at a certain stage the patient had suffered from painful whitlow.

To the whitlows are added a number of trophic disturbances, such as fissures more or less deep, ulcers situated in the natural folds of the skin and constituting a sort of perforating disease of the palm, propagating themselves sometimes to the tendinous sheaths, in which they excite suppuration. The entire process is indolent. The same is true of the phlyctenulæ which occasionally form at different points upon the external ligament, the hand, and fingers. The nails fall or become the seat of more or less marked and fantastic deformities, such as are scarcely met with in any other affection. The whole hand may become violaceous and livid. The temperature declines below the normal. Sometimes there is excessive sweating of the hand.

The trophic troubles are not entirely limited to the upper extremities. M. Broca has drawn attention to the existence of scoliosis. This may be more or less accentuated, but appears to occur quite commonly, since it has been found in about half the cases reported. Again, arthropathies having the appearance of dry arthritis were present.

Such are the constituent elements of the group of symptoms described by Morvan. But we must still pass in review certain other sides of the question, important from the nosographical point of view. I allude to the etiology, progress, duration, and prognosis of the affection.

The evolution is generally extremely slow. Its duration, likewise, extends to ten, fifteen, twenty years and upward. I have already referred to Prouff's patient, in whom it had existed for forty-four years, and to Jürgensen's, who had ailed for ten years. Therefore, we cannot state confidently, at any period whatsoever of its evolution, even when all the symptoms are entirely in abeyance, that the disease is arrested. In fact, an interval of twenty years elapsed in Prouff's case between the first four whitlows which attacked the right hand and the last four which affected the left hand.

The prognosis is necessarily grave, on account of the incurable deformities, the mutilations which sometimes are considerable, the paresis, etc. Actual infirmities are produced, which end in almost complete deprivation of one of the upper limbs.

Our knowledge of the etiology is yet limited. From the observations of Morvan we might assume that it was not very common, and that it scarcely occurred outside of Brittany. This idea would appear to be corroborated by the work of Prouff, who also practiced in the same

province. Singularly enough, our patient is a Breton. But it is now well known that the disease in question may develop anywhere. It seems to attack men much more often than women, who have furnished a very small contingent to the number of published cases. It may occur at any age,—at 20, 30, 40, or 50 years, or even earlier (in Prouff's case, at 12), or, again, later (in 1 of Morvan's cases, at 60). In some cases an injury is referred to as the origin of the first accidents, but this is far from being constant.

The question of diagnosis now arises, which, however, is three fourths solved by what I have already said in the beginning of this lecture. You will not confound Morvan's disease with scleroderma, because in the latter you never find necrosis of bone or the discharge of osseous fragments; the mutilations are established gradually by a kind of absorption of the tissues of the fingers. Furthermore, there is no trace of anæsthesia or of paresis in the extremities. Finally, the sclerodermic mask is so pathognomonic that in case of doubt it would settle the question.

In leprosy, the mutilations from gangrene, the constant presence of analgesia and anæsthesia, might give rise to a momentary hesitation. But, in the first place, a simple question addressed to the patient will teach us that he was born or has resided in a country in which leprosy prevails. Again, the examination of his body will reveal the presence of those patches of morphœa, of which I have spoken. Moreover, to consider only the mutilations themselves, which might allow of doubt, veritable whitlows do not occur in leprosy in which sphacelus, above all, is the active cause of the deformities.

We come at last to a disease of which I have treated in my preceding lectures, and which presents such close analogies with Morvan's disease that it has been sought to identify them. I allude to syringomyelia. This is characterized from the first by symptoms of muscular atrophy much more marked than in Morvan's disease, and presenting a much clearer picture of the muscular atrophy of Duchenne-Aran. Disturbances of sensibility, it is true, are also present, but these are much less prominent than in the disease which now engages our attention, and besides, and this is a very important differential point, they do not affect all the modes of sensibility. The sensations of contact are generally preserved, while, on the contrary, the sensibility to heat and cold are totally abolished upon large surfaces of the body. This dissociation of sensorial disturbances is characteristic of syringomyelia, and rarely found in hysteria. Trophic troubles analogous to Morvan's whitlow occur also in syringomyelia, such as fissures of the integument, arthropathies, and scoliosis. Whitlow, however, never forms but, as it were, accidentally; it is never, as appears to be the case in Morvan's disease, the predominant phenomenon.

I will add that differences exist between the two affections from the anatomo-pathological no less than from the clinical point of view. But these do not belong to the clinical study, and are only concerned with the post-mortem diagnosis.

(To be continued.)

ORIGINAL COMMUNICATIONS.

*THE PHYSIOLOGICAL AND THERAPEUTICAL ACTION OF SULPHUR.**

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THE mutations of medical practice as regards the employment of certain remedies is a fact no less curious on account of its familiarity. It might naturally be supposed that if a drug had been proved to possess valuable properties it would never be suffered to fall into disuse. Such neglect, however, we do constantly observe. New agents continue to be brought forward, more numerously of late years than ever before, and, while it is true that some of these are valuable additions to the resources of the therapeutist, it is equally true that many are found to be destitute of peculiar power. Nevertheless, amid this crowd of claimants for favor, old and tried remedies sometimes fall into unmerited neglect. It is incumbent upon us, therefore, to critically survey from time to time the entire list of active medicaments. We should seek to establish a consensus of professional opinion as regards the worth of drugs. As practitioners, whose duty is above all to relieve suffering and repair the ravages of disease by all means within our power, it behooves us to examine our weapons, the drugs and the physiological remedies at our disposal, just as care-

* Read before the Pennsylvania State Medical Society, 1890.

fully as the quality, the sharpness of edge, and antiseptic condition of our instruments and appliances prior to an operation in surgery. The more thoroughly physicians are acquainted with the manifold properties of the drugs they employ, the more successful are they in combating disease.

Among active medicinal agents few have been more completely neglected than sulphur. Few have less deserved neglect. In the hands of a preceding generation it was frequently and beneficially employed. The object of the present paper is to demonstrate that sulphur has a well-defined field of usefulness, within the limits of which it can be surpassed by no other means.

It should seem that an element so widely distributed throughout the kingdoms of nature, an element which is a necessary component of the physical basis of all life, must play an important part in the processes of nutrition. Sulphur is a constant constituent of albumen. It is present in from 1 to 1.6 per cent. in different varieties of albumen. Animal hair contains about 4 per cent. The proportion of albumen found in lymph is, according to Gorup-Besanez, 24.6 in 1000 parts; in chyle, 40.9; in blood, 195.6; in brain, 83.3; in liver, 117.4; in muscle, 161.8. A sulphur combination, sulpho-cyanide of potassium, exists in the saliva, while taurin, a normal component of the bile, contains a large proportion of sulphur.

From these facts of chemical composition we are led to suspect that sulphur may have a place as a remedy in the same category as iron and phosphorus; that is, as an element conducive to the health of albuminous organs and tissues. If sanguification be improperly performed, if the work of secretion be impaired, if elimination be checked, sulphur is one of the remedies which may be relied upon as a corrigent.

Sulphur is insoluble in water, slightly soluble in alcohol, ether, and fatty oils. It is likewise soluble in the oil of turpentine, and in alkaline fluids. It is next to oxygen in its affinity for other elements. It unites with most of them, and often in several proportions. When heated in the air it readily absorbs oxygen, and is transformed into sulphurous-acid gas. This compound, again, is gradually converted into sulphuric acid by exposure to air in the presence of water. The sulphites, in their turn, abstract oxygen from the air and are converted into sulphates. Sulphuric acid exhibits a no less marked affinity for water, by virtue of which it exercises an escharotic effect upon organic tissues. These powerful chemical attractions, by which sulphur is continually carried to higher combinations with oxygen, are closely concerned with the absorption, therapeutic action, and elimination of the element discussed.

The action of sulphur when directly applied to a surface is somewhat irritant. Yet it is marked by a more specific property in that it is an energetic germicide. From these two qualities it is capable of use in a variety of accidents or diseases of the skin. Wherever gentle stimulation is required, whether the affection be of a parasitic nature or not, sulphur may be properly and beneficially employed. Upon venereal sores, indolent ulcers, unhealthy or sloughing wounds, it acts as a stimulant and antiseptic. Its principal external use, however, is the destruction of the itch-mite, together with its ova.

But it is not the external application of sulphur to which I am to-day desirous of calling your attention. I seek to present it in the light of a constitutional remedy, having a well-marked effect upon nutrition.

Being insoluble in the acid contents of the stomach, sulphur presumably exerts little or no influence upon the function of that organ. Dissolved in the alkaline juices of the small intestine, a portion is absorbed under its own form into the portal circulation. Another portion enters the blood under the form of soluble sulphides. It has been conjectured that some is also absorbed after being dissolved in the fatty materials present in this part of the alimentary tract. If given in doses of half a drachm and upward it is probable that a large proportion passes unabsorbed into the large intestine, and there combines to form sulphuretted hydrogen gas, which is passed in considerable quantity by those who have taken full doses of sulphur. In some cases this gas appears to enter the blood, and produces prostration and anæmia. The secretion of the intestinal glandulæ is increased, and the elaboration of healthy bile promoted by the comparatively small amount which is absorbed. At the same time that portion which passes along the small intestine without undergoing change acts as a stimulant to the muscular coat

of the bowel. Thus, the food-detritus is softened and urged forward, and the substance acts, as every one knows, as a gentle laxative. The depurative effect of the intestinal secretion, the antiseptic property of the bile, the depletory effect upon the mesenteric radicles, must be of valuable service to the economy in certain conditions. Yet, as an illustration of the slight place which sulphur holds in the therapy of this country at the present time, I may remark that in vol. ii of the "System of Practical Medicine by American Authors," edited by Dr. William Pepper, treating of general diseases and diseases of the digestive system, two scant references to its laxative effects are all the notice which sulphur obtains.

After absorption this substance exercises a tonic, corrective, or alterative effect upon many secretions. It is rational to believe that as it is conveyed to the liver, and as one of the peculiar constituents of the bile, taurocholic acid, normally contains sulphur, it must favor the bile-producing function of the organ. Taurocholic acid is a compound of taurin and cholic acid, and 25 per cent. of the former body has been found to consist of sulphur. That the administration of sulphur is capable of producing a beneficial effect upon the biliary function of the liver is seen in cases of inactivity of that organ, to which I shall hereafter more particularly allude. From a similar course of reasoning I believe that the activity of the absorbent system is stimulated by the exhibition of small quantities of sulphur.

The secretory functions of the skin and mucous membranes are modified or improved under the use of sulphur. The epithelial appendages contain normally a notable proportion of this element. In perverted nutrition of these structures I have often witnessed decided improvement from the administration of minute doses of the same substance, which, in such cases, may be looked upon as a specific nutrient remedy. It produces a beneficial effect upon the bronchial mucous membrane.

It probably has a similar influence upon the mucous membrane of the genito-urinary tract.

A remedy which is connected with the action of the largest and most important gland of the body, which is closely related to the processes of secretion and excretion, and probably to the function of the absorbent system as well, must have an important, if obscure, influence upon the quality of the circulating blood. It must, consequently, minister to the nutrition of the muscular and nervous systems. It has been stated that sulphur increases the power and frequency of the heart's contraction. While I can speak with no actual knowledge upon this point, and while I should not anticipate a direct or speedy action upon the heart, nevertheless, I believe that its remote constitutional effects are to increase the heart's vigor. It favors, I think, the contractility of muscular tissue wherever situated. A considerable proportion of sulphur is normally present in muscle, and must, consequently, be continually supplied to the tissue. Hence, in certain conditions, the administration of sulphur improves the muscular health and tone. This being the case, it seems highly probable that cardiac contractility is promoted in the same way. The muscular coats of blood-vessels, of the intestinal tube, and hollow muscular viscera, as the heart, bladder, and womb, should partake of the same benefits. With the improvement of circulation the respiration should also be strengthened, deepened, and quickened.

Now, these constitutional results do not follow the use of sulphur as ordinarily administered. Of a full dose, a comparatively small proportion reaches the blood directly, but the larger portion descends the tube, and is, in the large gut, a source of sulphuretted hydrogen. This is a toxic gas, and although it usually escapes per anum, yet a small quantity may always be absorbed, since the prolonged administration of full doses of sulphur or a sulphide leads to emaciation and debility referable to the continued action of sulphuretted hydrogen, which impairs the red blood-corpuscles and depresses the motor ganglia of the heart.

The numerous chemical affinities of sulphur, its ready combination with the alkaline bases which it encounters in the small intestine, the ascending scale of its combinations with oxygen, blend the physiological and therapeutical actions of the elements and its compounds into an intricate study. The interesting questions arise, How does sulphur eventually do its work, and is it possible sharply to distinguish between the medicinal effects of sulphur, a sulphide, sulphurous acid, a sulphite, sulphuric acid, and a sulphate? The chemistry of the blood is, indeed, a dark subject. All that I can say is, that sulphur is readily converted into a sulphide, the sulphides and the sulphites into sulphates,

and that most, if not all, of the sulphur eliminated by the kidneys is combined in the form of sulphates. Whether administered free or combined, it is probably always as a sulphate that it circulates with the blood, and the tissues, of which it is normally a component, are capable of separating and appropriating the element as needed.

Sulphur is eliminated by means of the secretions of those glands which it stimulates,—the liver, skin, and intestinal glands. It has also been found in the milk and in the respired air. It is chiefly, however, excreted by the kidneys as sulphuric acid in combination with alkaline bases, potassium, sodium, or magnesium. From the skin and the lungs it escapes as sulphuretted hydrogen. I have been in the habit, for a number of years past, of administering sulphur in quite small doses as a constitutional remedy, not only in diseases of the skin, but also in various affections of the alimentary tract, mucous membranes, muscular and articular structures, and in certain infectious disorders. It was consequently with great pleasure that I read the testimony to the same effect of the distinguished practitioner and writer, Sir Alfred B. Garrod, published in the Lancet for April 6, 1889.

The most obvious indication for sulphur is as a laxative in affections of the lower bowel. Accordingly, we find that it has long enjoyed good repute in hæmorrhoids when operative interference is forbidden. It likewise proves useful even in cases of bleeding from piles. It arrests bleeding here, by unloading the engorged hæmorrhoidal vessels, removing obstruction to the circulation, and allowing the propulsive forces an opportunity to act. In stricture of the rectum the softened fæces produced by sulphur pass through the narrowed portion of the tube with less difficulty than more compact masses, while if the stricture be due to cancer sulphur-stools are less likely to occasion pain than those due to more active purgatives. For the same reason sulphur may be beneficially administered in fissure of the anus or anal fistule. It forms an appropriate laxative, also, as Professor Bartholow has pointed out, after operations upon the pelvic viscera. It may not be generally appreciated, however, and yet it is not surprising, on reflection, that a very much smaller dose than that laid down in books and generally employed is efficient, since, comparatively, so small a portion is absorbed. For the laxative power of sulphur is far more due to its action upon the glands and the muscular layer of the intestines than to the local effect of the unabsorbed portion. This, at least, is the conclusion to which one is led who sees regularity of alvine evacuation established by so small a dose as 5 or 10 grains daily. It is to such small quantities, continued for a considerable period, that we are indebted for the systemic action of sulphur. If bulky doses be administered, much of it is lost; much of it combines with hydrogen, either in the bowel or the blood, to form a toxic gas, while the albuminous tissues cannot be forced to appropriate more sulphur pabulum than their needs require. Sulphur will often prove remedial in a form of chronic sore throat associated with, and perhaps springing from, imperfect digestion. The patients are generally those who lead sedentary lives, and habitually overtask their powers in monotonous labor unrelieved by cheerful recreation. The digestive and nervous systems suffer, and various ills result, either from nervous sympathy or a mild grade of toxæmia. In such cases a change of habits, open air exercise, mental relaxation, and small doses of sulphur as an alterative suffice to effect a cure.

The more closely the functions of the liver are studied, the fuller must become our appreciation of its immense influence upon nutrition. It is true that in the processes of primary digestion the bile seems to perform a less important and peculiar part than the gastric or pancreatic secretion. But in what may be termed the secondary digestion of albuminous material a further and no less necessary elaboration takes place, by which unnecessary or deleterious nitrogenized bodies are separated in forms fit for excretion, and the crude peptones are transformed into the normal nutrient albumens of the blood. We are ignorant, indeed, of the precise manner in which these changes are effected. It appears probable, however, that bile, absorbed from the small intestine and carried in the portal blood back to its place of origin, is intimately connected with the metabolism of albuminous substances. Now, in order that this work may be properly carried on it is necessary that the hepatic circulation be active, and that the bile be secreted in normal abundance and quantity. If this be not the case we are all aware of the ills that result. Digestive difficulties are perpetuated

and intensified, imperfect preparation and separation of histogenetic and excrementitious products throw into the blood noxious materials, which impair intellection, embarrass the kidneys, disturb the bowels, and eventually excite structural disease of heart, blood-vessels, or kidneys, hepatic or renal calculus, gout, and, very possibly, diabetes or carcinoma. In the sluggish and overworked condition of the liver, which serves as the starting point of this long train of evil consequences, the habits of life must be radically altered. This is the first necessary step in the right direction. Such hepatic torpor I have often found to be benefited by the prolonged administration of small doses of sulphur. The cases which I have sketched are often hereditary, and the functional weakness would seem to point to a congenital insufficiency of the gland, as Dr. Budd many years ago suggested. Sir Alfred Garrod has seen wonderful relief result in a case of hepatic colic of many years duration from the use of a 5-grain sulphur lozenge persisted in for months. This is, indeed, removing the effect by striking at the cause.

If, as is often the case, hepatic indigestion be accompanied by constipation, a mercurial purge may fitly inaugurate the course of treatment on account of the promptness of its impression, but the systematic use of small doses of sulphur is less hazardous and more beneficial. Let me, then, ask my hearers, when confronted with chronic ailments due, in their inception, to derangement of the liver (and we all know how extremely common these cases are), to think of sulphur given in small, and what I may call tonic, doses.

Sulphur is a gentle stimulant to mucous membranes. It is an excellent remedy in chronic catarrhal conditions. As the bronchial mucous membrane is the most frequently and constantly exposed to this process, it is particularly in chronic bronchitis and bronchorrhœa that the remedy under discussion is found most serviceable. Excessive secretion is checked, the sputum becomes more liquid and more easily ejected, and the cough, consequently, less frequent and less troublesome. The eminent Irish physician, Dr. Graves, in his "Clinical Lectures," which are a model of style, and may, even after the lapse of so many years, be consulted with advantage, dwells upon the use of sulphur in chronic bronchitis. He tells us that his attention had been drawn to the value of this remedy in long-continued congestion of the bronchial mucous membrane, by observing the happy effect attending the use of sulphurous waters, as those of Harrogate. He recommends it especially in the disease as it occurs in aged and debilitated persons, with copious secretion into the bronchial tubes. It would probably be found useful in obstinate affections of other mucous membranes. Garrod suggests that it may be of service in cystitis, and, perhaps, in some disorders of the kidney. I think that it might very properly be tried in tubercular or gouty pyelitis, and likewise in disordered menstruation, when not obviously dependent upon serious organic disease of the womb or its adnexa.

As a normal constituent of muscular tissue, sulphur claims attention as a remedial agent in disturbed nutritive conditions of that system. Such disturbance is usually due to the toxic influence of either gout or rheumatism. Not infrequently the outbreak of a gouty paroxysm is preceded by painful muscular cramps. Rheumatism often attacks the muscular system, and lumbago, torticollis, or other myalgia refers the inquiring physician to a specific toxæmia. These muscular aches are often notably relieved by the persistent use of sulphur. Its applicability to the subacute or chronic muscular involvements leads one to think of making trial of sulphur when the same poison affects articular structures. In chronic articular rheumatism or gout the same method of treatment has been found beneficial. In rheumatoid arthritis, likewise, improvement results from the use of sulphur. Garrod tells us that it was in this disease that he first employed small and continued doses of sulphur. He adds that he is doubtful as to what precise share sulphur may have in the benefit secured, since he has been in the habit of concurrently administering other remedies, such as iodine or arsenic. Reasoning by analogy, however, I have no doubt that sulphur is of decided therapeutic importance in cases of this nature.

This remedy is of value in acute infectious disorders. In diphtheria and the sore throat of scarlatina the direct action of flowers of sulphur, which may be conveniently applied by blowing it through a paper cone, is decidedly antiseptic. It limits the spread of the membrane of diphtheria, destroys the microorganisms upon which the growth of the membrane depends, and disinfects the organic

product whose decay and absorption intensifies the blood poisoning. A similar beneficial action is exerted in scarlatina. In scarlatina, erysipelas, measles, and small pox an ointment containing sulphur moderates the heat of the skin, allays the congestion or inflammation, and disinfects the pus of variola. In place of sulphur itself sulphurous acid may be applied to the throat by atomization in diphtheria, scarlatina, tubercular or syphilitic ulcers of the pharynx or larynx, and bronchorrhœa. Sulphurous acid and the sulphites have been employed internally in most of the infectious fevers, and in puerperal septicæmia. We are obliged to confess the same disappointment with regard to sulphurous acid as to other germicides. They are not so effective within the human body as in the pathological laboratory. Nevertheless, certain of them do ameliorate, modify, and shorten the disease which they are not able to abort. In fact, profound alteration of the blood, disturbance of the nervous system, the circulation, secretion, and excretion, once inaugurated by a specific cause, cannot always rapidly subside, even upon destruction of that specific and material cause.

Syphilis is another great general disorder which is, to a certain extent, influenced favorably by sulphur. We all know that in the management of syphilis much depends upon the functional activity of the skin. Hence, baths and drugs which cause a slight determination to the integument, which heighten the respiratory and sudorific functions of that tissue, are important adjuvants to the more energetic antidotal treatment. Nothing is more unwise than a routine administration of mercury and iodide of potassium. There are times when such a course should be temporarily abandoned and the patient placed upon simple tonics. Again, it is always advantageous to occasionally suspend specific medication for a few days. During this period it is well to act gently upon the emunctories, and baths containing sulphide of potassium are very serviceable for their effect upon the skin. A resort to one of the sulphur springs may also be recommended, especially in cases of late syphilis and in debilitated subjects. Sulphur baths and mineral waters have long been esteemed as curative in mercurial and saturnine intoxication. While they exert no attractive influence upon the metallic poison, they probably augment the effect due simply to temperature.

Sulphur has been used in tuberculosis. It often seems to have a good effect upon local tubercular lesions, though I have never been able to assure myself that it had any influence upon the generalized disease. Both sulphurous acid and hydrosulphuric acid have been used.

Sulphurous acid and its combinations are extremely valuable in yeasty vomiting.

Sulphur is a valuable remedy in many diseases of the skin. As it stimulates the depuration of the blood, the capillary circulation, nutrition, and functions of the skin, as it enters into the chemical composition of the skin, the hair, and the nails, it is not surprising that sulphur should be found of great service in many chronic cutaneous affections.

When seborrhœa is not obviously produced by frequently operative local causes, such as exposure to heat and cold, I have usually been able to detect some deterioration of the general health in its subjects. Digestive ailments, exhaustion of the nervous strength by anxiety, overwork or excess; constitutional states, as scrofulosis, tuberculosis, carcinoma, anæmia, chlorosis, chronic malaria, and other depressing influences may be accountable for its occurrence. Except when it is associated with advancing phthisis, I have often witnessed marked improvement under the use of sulphur, especially in the dry variety of the affection. Nearly the same remarks may be made about acne, with the addition that it is peculiarly apt to develop in connection with the changes which take place at puberty. Manifestly, in maladies of which this may be said, no single plan of treatment is applicable to all cases. On the other hand, their common occurrence and their obstinacy compel us to the mastery of all our resources. Sycosis betokens impaired nutrition, whether due to deficient alimentation or waste of energy from habits or disease. Premature baldness and alopecia circumscripta are the result of impoverishment. The bulbs are shrunken, the shafts split and ragged. The condition may have been brought about by either local or general causes. In all these cases the internal administration of sulphur in small doses and for considerable periods has yielded admirable results, combined with appropriate topical treatment. Chronic eczema is an inveterate complaint, and we are often obliged to run the whole scale of remedies before we find the effective one. Not infrequently this effective remedy will be sulphur.

Again, boils, carbuncles, eczema, and urticaria are among the manifestations of liver-indigestion; general paræsthesia and the itching which often is attendant upon eczema may also be produced by the same cause. Here, then, we meet with a double indication for sulphur, which acts at once upon the liver and the skin. And here, although something of a digression, I may call your attention to the virtue of sulphide of calcium in furunculosis. Given early, it will often prevent the formation of pus and cause resolution. But if suppuration be inevitable, the sulphide of calcium will, at least, limit its extent, favor its early evacuation and closure of the cavity. In eczema, also, both of the acute and chronic form, I have found this sulphur combination beneficial. Malnutrition of the nails, expressed by hypertrophy, atrophy, or eczema, is sometimes amenable to sulphur in union with appropriate local measures.

Sulphur proves of avail in some of the most intractable maladies of the integument. In psoriasis it is of the utmost importance to secure functional activity of the skin, bowels, and kidneys. This is effected by sulphur, and I have found it of use in psoriasis given internally and also applied externally. Experience forbids us to expect much improvement in ichthyosis, scleroderma, and lepra; yet some amelioration or at least arrest of the disease seems, in certain instances, to follow the administration of sulphur. The substance called ichthyol, which has recently been introduced into dermatological practice, and has been found efficacious in these same chronic affections, owes its activity, for the most part, to the large proportion of sulphur which it contains. Ichthyol is, also, like sulphur, a most valuable topical medicament.

It has been my intention rather to invite your attention to the prolonged internal use of sulphur in small doses than to its local employment. Its use in scabies is time-honored. It is excellent also in pediculosis, tinea versicolor, tinea circinata, chronic eczema, and psoriasis. Sulphurous acid is an admirable germicide, one of the best which we possess. It is used with the most striking success upon neglected and foul ulcers, and upon unhealthy wounds. It may be advantageously applied in tinea favosa. Dr. Schuster, of Aix-la-Chapelle, has devised an ingenious manner of applying it to the scalp. A net of strings is stretched across the lower third of a card-board box, which fits to the head and can be closed by a lid of the same material. A saucer containing burning sulphur is laid upon the net of strings and the box covered. The patient must sit still for half an hour. An abundance of sulphurous-acid gas is generated, the sulphur ceasing to burn, of course, as soon as all the oxygen is exhausted.

Some doubts have been thrown upon the value of sulphurous acid as a disinfectant by the experiments of Koch and Sternberg. These, however, related to the power of the gas in disinfecting apartments and large masses of material, such as contaminated rags in bales. The gas was rapidly lost by diffusion, and was found to have slight influence upon dry spores. Nevertheless, it deserves to be ranked high as an antiseptic to moist cultures or under the conditions in which micro-organisms develop in human tissues.

My remarks have applied for the most part to uncombined sulphur. The ready combination of the element and the ready conversion of sulphites into sulphides establish a close community of therapeutic action between sulphur, sulphides, sulphurous acid, and the sulphites. Sulphuric acid and the sulphates exhibit diverse properties.

I have been accustomed to administer washed or precipitated sulphur in milk or in capsules. Garrod gives it in the form of a lozenge containing 5 grains of the milk of sulphur and 1 grain of cream of tartar.

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*MORBID ASSOCIATIONS IN NERVOUS PATHOLOGY, APROPOS OF A CASE OF CHRONIC RHEUMATISM COMPLICATED WITH HYSTERICAL ANÆSTHESIA.**

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MORBID associations in nervous pathology are not absolutely rare. When encountered, the physician is often obliged to consider various clinical problems in order to form, if possible, a precise diagnosis. The co-existence in the same patient of symptoms belonging to different affections is, in fact, calculated to sometimes mislead the judgment. It is possible to overlook one of the complicating maladies; it is possible, by reason of the complexity of the morbid picture, to mistake alto-

* From Le Progrès Médical, May 18, 1889.

gether the disease with which we have to deal. It would be easy to find, in medical literature, many examples illustrative of this fact. I shall content myself with alluding to some of the most recent and at the same time most demonstrative.

All progressive physicians will recall those cases cited by my illustrious master, Professor Charcot, in which syphilitic patients present various symptoms indicative of hysteria. These disorders, looked upon as due to cerebral or spinal syphilis, have led many to employ, to say the least, an inappropriate therapeusis: cauterizations the length of the spinal column, the actual cautery, etc.

Professor Potain (Gazette des Hôpitaux, 1887) has related a case of hysterical paralysis which attacked a victim of lead poisoning, and simulating, in consequence, a lead palsy. Some months later the same author published an account of hysterical paralysis occurring in a syphilitic.

The very interesting discussion which took place lately before the Medical Society of the Hospitals, in reference to the relations between exophthalmic goitre and tabes dorsalis, has brought to mind an observation made by M. Féréol as long ago as 1874, concerning exophthalmic goitre accompanied with tremor, paresis, hyperalgesia, hemianæsthesia, etc. M. Ballet has confessed, with his habitual candor, that, at the time of publication of this case, he had been inclined, in view of all the phenomena associated with the usual symptomatology of Graves's disease, to refer them, and the goitre as well, to a bulbar lesion. This is, indeed, the interpretation given by M. Ballet to the case of M. Féréol in a memoir published in the Revue de Médecine, 1883, p. 274. He adds that now, enlightened by the researches of the Salpêtrière school in hysteria of the male, he has abandoned his former opinion and sees in the patient of M. Féréol only a case of exophthalmic goitre complicated with hysteria.

I believe that I was the first to announce the occurrence of saturnine hemianæsthesia (Thèse de Renaut, 1875). At that time we had regarded, with Vulpian, the patient as suffering from a slight cerebral hæmorrhage seated in the posterior portion of the internal capsule. M. Debove, who has at different times published similar facts, has correctly ascribed them to hysteria.

I have recently seen several cases analogous to those described by Professor Charcot: syphilitics with hysterical symptoms, chorea of hysterical origin, anæsthesia, and, finally, trophic derangements linked with chronic rheumatism, with anæsthesia limited to the affected hand. The last case appears to me of especial interest, since it well exemplifies the difficulties of the diagnosis in such conditions.

CASE.—Trophic alterations of the right hand dependent upon chronic rheumatism. Hysterical anæsthesia limited to the same hand.

L., aged 32 years, a cook, was admitted November 8, 1888.

History.—The patient states that his father was a healthy man. His mother, however, was subject to migraine. A sister was also healthy. His brother, otherwise healthy, had had simultaneously whitlows upon two fingers of the right hand. The childhood of L. was free from disease.

In 1878, at the age of 23, he suffered his first illness, an acute rheumatism, which involved all his joints. He remained for six months in a military hospital. The salicylate of sodium does not appear to have been administered. The joints of the right hand were most severely affected. However, all the articulations finally returned to their normal state, and he was able to use the right hand as well as the left. Several days after leaving the hospital he had facial erysipelas, which was soon cured.

In 1884 he had a second attack of acute articular rheumatisn. This, according to the man's statement, was more severe than the first, as regards pain and fever. The left arm was spared. Not so the right arm or the legs; the right hand, in particular, was greatly swollen, and remained disabled for a long time after the other joints had healed. After convalescing from this second attack of rheumatism he suffered from furuncles, from eczema of the hairy scalp, with large vesicles, and from erysipelas. In December, 1887, he had articular rheumatism for the third time. On this occasion the disease seems to have been less severe than formerly. The legs and left hand suffered but little, though the right hand was enormously swollen, and very painful. Toward the end of this illness he was able to bend the fingers, but the hand was weakened; at this time sensation remained; he could feel when pinched. Scarcely had he recovered from the rheumatism, and while still in hospital, than he was

again seized with erysipelas, which, as formerly, located itself upon the face and hairy scalp. For the erysipelas he was bled from the right arm. It must be observed that upon recovery from the erysipelas his right hand remained swollen and slightly anæsthetic. The patient states that the peculiar condition of his hand several times attracted the attention of the physicians.

When fully convalescent he went to Vincennes, and, upon leaving that asylum, he was able to resume his work as cook. The right hand was pretty well restored to usefulness, and he could lift considerable weight.

About August 15, 1888, the patient noticed that his perception of contact was diminished in the right hand, which was a little swollen and less warm than the left. At the same time the fingers were stiff, except the thumb, which preserved all its liberty of movement. Soon the entire right arm became weakened. Happening to prick himself with a fish-bone one day, no ill results followed; he never had either whitlow or abscess.

The man has never suffered from nervous attacks. The stiffness of the fingers and the weakness of the arms increasing, he decided to enter the hospital.

Present Condition (November 9, 1888).—He is thin, of florid complexion, and good general health. Nothing in his mental state calls for remark. There is no peculiarity about the lower limbs and the left arm. But the same cannot be said regarding the right arm, and especially the right hand. There is, in fact, a slight paresis of the entire member. Besides this slight loss of muscular power there is nothing abnormal in the shoulder, arm, or forearm. The right hand is of a deep-violet color upon both the dorsal and the palmar surfaces. The extremities of the fingers are almost black. When strong pressure is exerted upon the entire hand, the color disappears for a moment and gives place to a whitish hue. When the pressure is removed the asphyxiated appearance rapidly returns. To the touch the temperature of the skin of the right is less than that of the left hand. The greatest depression of temperature is at the extremities of the fingers. Little by little, as the lower third of the forearm is approached, in proportion as the color becomes normal the temperature increases until it becomes equal to that of the opposite side. The dorsal surface of the hand is slightly œdematous; the skin appears thickened; considerable force is required in order to make a slight depression.

The fingers, especially, are œdematous. In comparison with those of the left hand they are seen to be larger at their line of junction with the metacarpus, but more particularly at the articulations of the first with the second phalanges. The enlargement around these joints gives a spindle shape to the fingers. Instead of being rectilinear, they are incurved toward the palm. They are likewise immovable; the patient cannot extend, separate, or draw them together. The thumb is the only exception, although its movements have lost much of their force and amplitude. Nevertheless the man is able, though with difficulty, to bring the thumb into apposition with the other fingers. The nails are much more incurvated upon the right than the left hand. The palmar aponeurosis is slightly retracted. The fingers remained stiff even when the patient was placed under the influence of chloroform. There are no trophic disorders in the right hand or in any other portion of the body.

Examination as to sensibility reveals the presence of complete anæsthesia to cold, pain, and tact. The anæsthesia involves the hand and all the fingers, except the thumb, around the borders of which slight sensibility to touch is preserved. This anæsthesia extends to the lower third of the forearm, where it abruptly ceases.

In no other portion of the external surface does any perturbation of sensibility exist. The pharynx, however, is distinctly anæsthetized. There is no contraction of the visual field. The pupil reacts by dilatation under the influence of pressure, pricking, etc., of the right hand. The paths of reflex conductibility are evidently not interrupted. When a current of induced electricity is applied to the hand, its influence upon the extensors of the fingers is apparent, though less distinct upon the right than the left hand. Faradic contractility, also, is less active in the right hand. Extension of the fingers seems particularly embarrassed on account of the stiffness of the joints. The muscles of the right thenar eminence, however, contract normally. There is a slight lateral curvature in the dorsal region of the spinal column, the convexity being directed to the left side. The

summit of the deviation corresponds to the seventh dorsal vertebra. The right radial artery beats normally. The coloration of the right hand varies in different parts of the day, passing from purple black to rose. The temperature, likewise, varies at different times. There is generally a difference of 10° between the two hands.

The patient was given ordinary diet, and treated by means of the induced electrical current and light massage.

On November 30th, while under chloroform, it was determined (1) that the right hand gradually lost its purple coloration and became of a rosy hue; (2) that at the same time the temperature rose until it surpassed that of the opposite hand; upon the back of the right hand the instrument marked 32.6° C. (90° F.), and upon the back of the left hand 30.4° C. (86.7° F.).

During the complete muscular relaxation of anæsthesia it was found that flexion of the fingers was almost as impossible as when the patient was in the normal condition. The resistance was due to the fingers themselves, and not to contraction of the extensor tendons. The attempt to move different segments of the fingers upon each other demonstrated that these were rendered immovable by adhesions running longitudinally, especially upon the lateral surfaces and at the level of the articulations.

While during anæsthesia the right hand became warm, the temperature of the forearm was less than that of the left side. Some hours after recovery from the anæsthesia the temperature and color of the right hand returned to the former condition. The cutaneous anæsthesia persisted.

On the 2d of December there seemed to be a slight return of sensibility. On the 17th the patient experienced, for the first time, painful cramps in the muscles of the shoulder. Such is the history of our patient. Let us see if it is possible to interpret with certainty the group of symptoms.

In view of the paresis, anæsthesia, trophic and vasomotor troubles, limited to the right hand, together with the evolution of the malady, it is first necessary to determine whether we have to deal with a case of pareso analgesia (Morvan's disease) or of syringomyelia.*

Now, one of the principal symptoms, the whitlow, considered by Morvan as essential to the clinical picture of the disease which he has described, has been absent. Again, the case of this patient cannot be classed as syringomyelia on account of the special characters presented by the anæsthesia of the hand. We know, from the remarkable researches of Charcot, that anæsthesia which limits itself exactly to the cutaneous surface of an organ, or portion of an organ, is of a hysterical character, especially if, as in the present case, there exist a zone of transition. This zone of incomplete anæsthesia forms a circular band of greater or less size, the upper border of which is parallel, or nearly so, to that of the anæsthesia properly so called. This character, which agrees with that of the sensory troubles of our patient, is pathognomonic. It is a sign which proves that, in the present case, the anæsthesia is not the consequence of lesion of the peripheral nerves or the spinal cord. If I pinch the man sharply upon the anæsthetized surface, although he does not perceive it, yet the left pupil instantly dilates, just as when the right hand is pinched, which could not happen if the conductors or the centres of sensibility were themselves involved. The anæsthesia, therefore, is a hysterical anæsthesia. Moreover, it should be remembered, there is also pharyngeal anæsthesia.

Having learned the signification of the anæsthesia, let us inquire how the trophic disturbances of the right hand, the anæsthetized hand, are to be explained.

They are sufficiently explained—we think so, at least—if one recall the gravity, long duration, and tenacity of the rheumatic attacks of which the right hand has been the principal seat. The violent pains have at first immobilized the fingers, which have become fixed in their present position and deformed by the rheumatic inflammation. The latter has produced the fibrous bands to which the contraction is due; of this we assured ourselves during the chloroform anæsthesia. The same influence has inaugurated the retraction of the palmar aponeurosis, or, to speak more correctly, of the flexor tendons of the last two fingers. It does not seem necessary to discuss the existence of a problematic nervous agency in order to comprehend the nutritive disorders to which we have made allusion.

It now remains for us to ascertain the cause, or rather the causes, of the comparatively great

* I will not here discuss the question which has been raised, whether the two affections named are distinct or one and the same. To this point I will return in a future communication.

reduction of temperature in the right hand. This symptom does not appear to us to at all invalidate the interpretation which we have just given of the anæsthesia and the trophic troubles. The causes of the lowered temperature are, in fact, multiple and agree well with the clinical complex which we have just analyzed. We shall remark, in the first place, that hysterical anæsthesia itself suffices in certain patients to diminish by several degrees the temperature of the anæsthetized part. The hand is paretic and immobile, and in these conditions easily yields to the influence of atmospheric variations. The fibrous thickenings around the articulations and along the tendons probably inclose blood vessels, and, therefore, to a certain extent, the circulation is impeded. The combination of these conditions produces, in the present case, a permanent local asphyxia of the right hand,—an asphyxia carried to a degree rarely attained in Raynaud's disease.

In our patient, therefore, undoubted hysterical symptoms have become grafted upon an organic and palpable disease,—chronic rheumatism of the hand. These symptoms blend with those of the primitive malady, to which they add a foreign psychical element under the form of a partial anæsthesia. Nor is this psychical anæsthesia always as protean in expression as is generally thought. It may be, as in this case, of limited manifestation, and yet no less a neurosis. In fine, a permanently depressed local circulation and a considerable reduction of temperature are the consequences of the hysterical anæsthesia and the nutritive disorders due to the chronic rheumatism.

The permanent disorder of the circulation and the profound diminution of local temperature suggested for a moment to my mind an affection described under the name of erythromelalgia, or vasomotor paralysis of the extremities.

First mentioned by Graves, in 1843, in his clinical lectures, under the title of "Singular Affection of the Feet," it has been further studied by Weir Mitchell (American Journal Medical Sciences, 1879); Grenier (Bordeaux Médical, 1873); Siegerson, of Dublin (Progrès Médical, 1874); Vulpian ("Lectures upon the Vasomotor System," 1875); Strauss (Société Médicale des Hôpitaux, March 26, 1880), and was during the last named year the subject of an excellent thesis ("Thèse de Lannois," Paris, 1880). M. Duval has given some lines to the disease in his article on "Vasomotor Disorders," in the Dictionary o

Vasomotor paralysis of the extremities, common enough in rheumatics, habitually attacks the feet, the exceptions being the case of Siegerson, in which both hands were affected, and two observations of Weir Mitchell. It generally begins with pain, which continually increases until it may become extremely severe. Exceptionally, only prickling, with dull pain, is present. Congestion and altered temperature appear subsequently, and almost always the latter is elevated in the congested parts. Usually the different varieties of sensibility remain intact; sometimes hyperæsthesia to cold exists. The subjacent muscles are, as a rule, uninvolved, though in rare instances they become atrophied, and a certain degree of paresis is the consequence.

This symptomatic tableau, briefly sketched, does not, in its principal and important features, correspond to that of the patient who is the object of our observation. And it seems more rational to connect the clinical phenomena which we have described to the co operation of hysteria and chronic rheumatism.

However that may be, the interpretation of facts of this nature will become more easy to him who always has present in his mind the possibility of the morbid associations to which we have referred at the beginning of these remarks.

ACTION OF THE POSITIVE POLE OF THE CONSTANT GALVANIC CURRENT UPON MICRO-ORGANISMS, AND ESPECIALLY UPON THE ANTHRAX BACILLUS.

By MM. APOSTOLI and LAQUERRIERE.
PARIS, FRANCE.

THE antiseptic and microbicidal action of the constant galvanic current, anticipated by one of us in 1886,* has been the subject of joint investigations during the last two years.

In a sealed communication to the Academy of Sciences, August 12, 1889, we have recorded the first results of experiments undertaken by placing the poles at the two extremities of a test-tube containing a culture broth, and at a short distance from each other. All our ex-

* Apostoli: Traitement de l'endométrite par la galvanocaustique chimique intra-utérine, pp. 38 and 50, 1886.

periments have been under the control of cultivation and inoculation.

Our principal conclusions are as follow:—

1. The action of the constant galvanic current upon cultures is in direct relation to the intensity of the current stated in milliampères.

2. With the same intensity, all other things being equal, little account need be made of the duration of the application, the intensity of the current being always the principal factor.

3. A current of 300 milliampères and upward, applied for five minutes constantly, destroys the anthrax bacillus. The culture so treated is sterilized, is unable to propagate itself, and inoculation of snakes with it produces no effect.

4. A current of from 200 to 250 milliampères applied during five minutes does not destroy the virus so certainly and constantly; some animals still die, but not as soon as others inoculated with a portion of the culture which had not been subjected to the action of the current.

5. A current of 100 milliampères or less, even after an application of thirty minutes, does not destroy the virus; it produces an attenuation which increases with the intensity of the current, and which is shown by the fact that snakes inoculated with it die a day or two after those inoculated with the standard culture.

We have since determined that these effects are independent of the thermic influence which accompanies all electrolysis, and have studied the influence of the separate poles and of the interpolar portion of the current.

We are now able to formulate the following complementary conclusions:—

1. We may omit experimentally the calorific effects of the current and obtain the destruction or attenuation of the microbic vitality.

2. The positive pole alone destroys or attenuates the vitality of the pathogenetic organisms which remain unaffected by the interpolar action or that of the negative pole.

3. The antiseptic action of the positive pole (in a culture-medium distinct and entirely separate from the negative pole) is exercised by a weaker electric dose than in the first experiment (in which the two poles, being contiguous, diminish their reciprocal action). Thus, the positive pole does not kill at 50 milliampères during a period which may vary from five to thirty minutes; but, above this intensity, attenuation begins and progressively increases until, during the last five minutes, it becomes constant between 100 and 150 milliampères.

4. The general conclusion derived from our researches is, that the continued current in the so-called medical dose (from 50 to 300 milliampères) has no action *sui generis* upon cultures of microbes in a homogeneous medium, and that the sole action of its positive pole is limited to the disengagement of acids and of oxygen, as we shall demonstrate in a future communication.

We give a figure of the apparatus (and its dimensions) with which our last experiments were made.

The axis of the tube has a length of 25 centimetres (9.84 inches), measured from the positive to the negative pole.

The section of the tube is 6 centimetres (2.36 inches).

There are two contractions of 2 centimetres (0.78 inch) each, and a section of about 5 centimetres (1.96 inches).

The total resistance of this articulated tube is equal to that of a rectilinear tube 25 centimetres (9.84 inches) long, and of 5.5 centimetres (2.15 inches) in section.

A TEST for the purity of drinking-water is given as follows by Professor Angell, of the Michigan University: "Dissolve about half a teaspoonful of the purest white sugar in a pint bottle, completely full of water to be tested, tightly stopped; expose it to daylight and a temperature up to 70° F. After a day or two examine, holding the bottle against something black, for floating specks, which will betray the presence of organic matter in considerable proportion."—*Practice; St. Joseph Med. Herald.*

Mabel (to Jack, who is about to drink her health for the ninth time)—"Oh, I wouldn't, Jack. Drink to me only with thine eyes instead."

Jack—"All right. Well—er—here's looking at you."—*Harvard Lampoon.*

ABSTRACTS.

HISTOLOGICAL EXAMINATION OF THE TESTICLE IN ELEPHANTIASIS.—At a meeting of the Academy of Medicine, held August 12th, M. le Dentu communicated the results of an examination of a testicle from a case of elephantiasis. The lesions consisted of a sclerosis which involved all the coverings of the testis from the skin to the tunica albuginea, inclusive. The gland itself was comparatively intact, though the epididymis was markedly affected. This sclerosis was characterized by the presence of a large number of dilated lymphatics with thickened walls. The tunica vaginalis had disappeared and its place was taken by numerous thick-walled cysts as large as pigeons' eggs.—*La Tribune Médicale*, August 14, 1890.

MENSTRUAL INSANITY. — The phenomena accompanying the menstrual period are very numerous and for the most part of a congestive nature, affecting various organs. In many cases the attack is entirely borne by the nervous system. This is the explanation of the periodical and temporary disturbances which occur at the catamenial epoch. A young girl of 19, born of neurotic parents, of good general health, came into the hospital on account of trouble of this nature. Her menses had been regular, but at each return she became subject to spasms of asthma, and at the same time suffered from very severe uterine colic. Six months previously, in consequence of violent emotion, the menstrual fluid was suddenly arrested and a state of insanity with hallucinations came on and continued for ten days. The mental disorder then completely disappeared, only, however, to be renewed at the next monthly epoch, and from that time the condition has been renewed at each corresponding period. The alienation is particularly characterized by an excessive loquacity, by agitation, partial visions, etc. There were no aggressive symptoms. An attack always lasted from eight to ten days, after which she became sane, but retained no recollection of her madness. Now, this is an important point, for a maniac who remembers nothing of his attack is much farther removed from cure than one who remembers its incidents and can speak of them, especially if he can do so without blushing. In this patient there is an absolute coincidence between the menstrual period and the manifestation of insanity. The former pains, too, have completely disappeared as if they had been a sort of counterbalance to the cerebral excitement. The origin of these attacks is to be found in a predisposition. Her father was subject to attacks of melancholia, and her mother was of a neuropathic constitution. A sister was a hystero-epileptic, while as to herself she had been under an extreme mental strain at the time of the first outbreak.

Most women experience during menstruation some morbid manifestation which is generally related to the nervous system. The most common disorder is migraine, which may be looked upon as the beginning of a slight cerebral excitation. But, besides this trouble, which is so common, eccentricities of character are sometimes developed and may attain an extreme degree. In the hysterical, and especially the epileptic, attacks are often excited at this time. The most frequent mental disturbance takes the form of a modification of the natural disposition, which becomes quarrelsome and contradictory, and renders the patient a torment to the household.

Terrible fits of jealousy are also often produced. In these cases the moral and intellectual disturbances only hint at graver results. But numerous observations testify to the development of dipsomania, kleptomania, etc. Erotomania, likewise, is of frequent occurrence, and a case is on record in which the patient, in a state of extraordinary genital excitement, demanded to be led at once to a house of prostitution.

The most serious of all these troubles is homicidal mania, of which a certain number of well-attested cases are known. Usually, however, the mania is generalized. It is mania, properly so-called, and rages during the flux of blood. All these complications usually cease with or soon after the menstrual period. But occasionally the victims become chronic maniacs. Melancholia is generally the form which the alienation assumes. This is especially seen in young girls at the appearance of the first menstruation. The perversions may afterward disappear.

The prognosis of menstrual insanity is, indeed, comparatively favorable. It is necessary, however, to take into consideration a predisposition. With this exception therapeusis is more effective than in other forms of insanity.

Leeching and blistering may be of some use, but the principal reliance is to be placed upon the bromide of potassium, which is essentially a genital remedy. It is well to employ it in all the milder varieties of the disorder, which are almost physiological, but which, nevertheless, are not without importance. Finally, when actual insanity is concerned we must not forget that opium, morphine, atropine, and small doses of tartar emetic are very efficacious sedatives.—*Journal de Méd. et de Chir. Prat., La Gazette Médical de Montréal*, August, 1890.

Hysterical Mutism in Man.—Two cases were reported by M. Landgraf to the Laryngological Society of Berlin. In one, the patient was a door-keeper, who, in consequence of extreme fear, lost consciousness, during which he was robbed of a sum of money. The man had other hysterical manifestations, such as unilateral anæsthesia. The laryngoscope showed a paralysis of the adductors. This disappeared after endolaryngeal faradization. Speech was then rapidly regained. In the second case complete hysterical mutism followed a profound mortification. The voice did not return promptly and a period of eight days elapsed before the man was able to speak. —*Revue de Laryngologie*, etc., August 1, 1890.

Application of an Elastic Ligature in the Removal of a Portion of the Liver. —At a meeting, August 12, 1890, of the Academy of Medicine, M. Terrillon reported the following case: A woman, aged 53 years, entered the Salpêtrière on account of a tumor in the right hypochondrium. The tumor was continuous with the liver, large, and very painful. An exploratory puncture showed that it was a hydatid cyst, but caused no sensible reduction of its volume. For this reason laparotomy was determined upon and practiced. Through an incision, made parallel to the right false ribs, a portion of liver the size of two fists was withdrawn. This was full of small cysts, and, although there was no pedicle, M. Terrillon considered its ablation necessary. With this end and in order to avoid serious hæmorrhage, he placed an elastic ligature so as to form an artificial pedicle. Seven days later the diseased portion which had been retained without the abdomen was removed, together with the ligature. The sloughed base of the pedicle was separated from the peritoneal cavity by adhesions. In six weeks cicatrization was complete, and the patient has now resumed her usual employment.—*Le Progrès Médical*, August 23, 1890.

An Early Symptom of Locomotor Ataxia.—Dr. Heinrich Weiss describes (Wien. Med. Press) the case of a book-keeper, whose first symptom was an uncertainty in stepping backward, in whom characteristic manifestations of locomotor ataxia subsequently developed. The importance of this initial symptom was pointed out by Althaus in 1884, in reporting the case of a painter who noticed it in himself as he backed away from his easel.—*Deutsche Medizinal Zeitung*, August 28, 1890.

Cannabis Indica in the Treatment of Gastric Neuroses and Indigestions.—The following are the conclusions of M. Germain Sée, of Paris:—

1. Cannabis should be used in the form of a fatty extract, in the daily dose of 5 centigrammes (about ¾ grain), given in three doses, and in solution. Beyond this dose it becomes toxic, its action resulting in a form of inebriety.

The chemical principles of cannabis, such as tannate of cannabine and cannabinon, have not yielded precise or favorable results, no doubt because they are not genuine active principles.

2. It has been employed principally in the functional disorders of the stomach.

These disorders fall into two groups:—

The first is marked by chemical alterations of the gastric juice, among others hydrochloric hyperacidity, the most frequent of all forms of indigestion. Organic hyperacidity, lactic or acetic; and, on the other hand, anacidity, complete this variety of gastric ailments.

The second group includes only gastro-intestinal neuroses, which occur without any chemical modification of the gastric juice.

3. All these affections, indigestions as well as neuroses, are characterized by five varieties of phenomena, which may be thus summarized:—

(*a*) Painful sensations, local or radiating, spontaneous or provoked by the contact of food with the gastric mucous membrane. Modifications of appetite belong to this series; it is increased in hydrochloric hyperacidity, diminished in lactic and acetic hyperacidity, and is often lacking in anacidity. The gastro-intestinal neuroses lead rather to caprices or partial loss of appetite.

(*b*) Paretic disorders, *i.e.*, atony, with or without dilatation, occur in nearly all cases. Antiperistaltic trouble or vomiting are far more common in the neuroses, to which, in fact, they generally point.

(*c*) Gaseous symptoms, *i.e.*, pneumotoses and eructations, are observed in most cases. In the neuroses the gas is often merely air which has been swallowed. Gas due to decomposition is the habitual sign of lactic or acetic acidity, but not of hydrochloric. This causes the painful sensation of pyrosis.

(*d*) In hydrochloric hyperacidity the gastric digestion of albuminous food is perfect; in all cases of lactic or acetic hyperacidity it is imperfect; it is incomplete in anacidity. In neuroses, on the contrary, gastric digestion is properly performed as regards all kinds of food.

(*d a*) Intestinal digestion is closely connected with gastric. In hydrochloric acidity it is complete, though at first feeble, and is constantly attended by constipation. In anacidity, intestinal digestion is profoundly disordered, and constipation alternates with diarrhœa. Under these conditions the situation becomes grave, because the most important part of digestion, and, above all, absorption, takes place in the bowel. When the stomach alone is attacked cure is possible, because the intestine may be looked upon as a substitute. But no organ can replace the latter.

In gastro-intestinal neuroses only nervo-motor phenomena occur at first. Intestinal digestion is intact. Subsequently, however, the large intestine, on account of the presence of materials more or less decomposed, becomes the seat of membranous enterocolitis, a grave affection which demands careful treatment and rigid diet.

(*e*) The last class of symptoms comprises remote accidents, as, *e.g.*, vertigo, fear of space, migraine, insomnia, somnolence—phenomena referable to the circulatory system. These are frequently observed in both morbid groups. The same is true of palpitation and oppression, and, in fine, with the secondary influence of indigestion and gastro-intestinal neuroses upon the brain and nervous system in general.

4. The constant action of cannabis is to relieve pain and re establish appetite, under whatever condition the pain and the loss of appetite may have been produced. If these depend upon hydrochloric hyperacidity it is necessary to assist the action of cannabis by means of large doses of bicarbonate of sodium at the end of gastric digestion—that is to say, about four hours after the ingestion of food.

Cannabis has no effect upon atony and dilatation of the stomach. These rarely yield except, perhaps, to physical means, such as irrigation of the stomach and hydrotherapy. It has a favorable action upon gastric spasm and vomiting of nervo-motor origin. It has no direct influence upon the production of gas, but does possess a useful action upon its elimination by the stomach, upon the eructations, and, above all, upon the painful sensations known as pyrosis, produced by the gas of fermentation.

Gastric digestion is favored by cannabis when lengthened by a nervo paralytic condition or made painful by hydrochloric hyperacidity. It produces no improvement in those cases which lack hydrochloric acid; it may even render such more painful. Intestinal digestion is likewise benefited by the sedative properties of cannabis.

Cannabis appears to have a good effect upon the remote phenomena, such as vertigo, migraine, insomnia, palpitation, and even dyspnœa. It is often able to cause the disappearance of these painful accidents. But it produces scarcely any modification of the nervous dispositions, which express themselves in hypochondria, hysteria, or neurasthenia, although those states often have their point of departure in chemical or nervous gastric affections.

In conclusion, cannabis is the veritable gastric sedative, with none of the inconveniences of the narcotics, such as opium and chloral; the absorbents, as bismuth; the general sedatives, as bromide of potassium; or the analgesics, as antipyrin; all of which, without exception, exert some unfavorable action upon the digestive tube. Cannabis necessarily requires the aid of other curative methods, which, as the alkalies in large doses, certain purgatives, and more rarely antiseptics, fulfill precise indications. It needs, moreover, the support of a regulated regimen, based upon the recent discoveries of physiology concerning the remarkable connection between the stomach and the bowel.—*Deutsche Medicinische Wochenschrift*, August 21, 1890.

TUBERCULOSIS OF THE SCLEROTIC.—A case unique in literature has been observed by M. Müller. The patient was a boy, upon whose sclerotic, at its lower and external part, an ulcerated tumor existed. Between the tumor and the outer angle of the eye the conjunctiva was studded with several nodules. In January the tumor was not yet ulcerated and looked like a cyst. But as such cysts are usually congenital, and the tumor was of recent development, M. Fuchs made the diagnosis of cysticercus. The father of the boy suffered from tænia.

In operating, the cyst was found to have soft contents, and walls formed by granulations. Microscopic examination revealed no hooklets, but the walls of the cyst were seen to be composed of miliary tubercles containing tubercle bacilli. Some weeks after the operation the tumor returned. It was again removed and its base cauterized, but there remained a thin layer of sclerotic, which became ectasic and may lead to loss of the eye. Perhaps a good result would be obtained from parenchymatous injections of iodoform.—*Recueil d' Ophtalmologie*, July, 1890.

THERAPEUTIC NOTES.

TREATMENT OF INCONTINENCE OF URINE IN WOMEN.

In case of irritability of the bladder following cystitis in elderly females, the irritability has been found to be due to a reduction in size of the interior of the bladder, caused by a hypertrophy of the muscular coat. It may be happily treated by a gradual dilatation by means of water introduced through a silver catheter. The water should be tepid. The injections should be repeated once daily; a Higginson syringe should be used. Thus treated, a bladder which can retain two ounces of fluid may, at the end of three months, be enabled to bear eighteen. After the bladder has reached a certain degree of distention the incontinence ceases. This method may also be, and has been, used with success in the incontinence of urine in children.—*Annals of Gyn. and Obstet.*

TREATMENT OF HÆMORRHOIDS IN WOMEN.

In cases of lax and indolent hæmorrhoids no treatment is necessary, also nothing need be done when they are dry and verrucous. If they swell during the crises, the pain, uneasiness, and itching may be calmed by rest, a frugal diet, saline purgatives, and cold injections, which relieve the constipation.

In case the patient is suffering from the oozing variety, then she should be put to bed, and compresses applied locally soaked in either a solution of subacetate of lead, sulphate of zinc, or glycerin, to which tannic acid has been added, or a pomade of calomel may be used.

If the hæmorrhoidal tumors should inflame the patient should remain in bed, while compresses of cold water are to be locally applied; ice-bladders may also be used. If they ooze and ulcerate, they should be removed by the thermo-cautery heated to a cherry-red heat; it, however, is not advisable to remove all these swellings in the anal region for fear of causing a contraction of the orifice.—*Annals of Gyn. and Pediatry; Indiana Med. Jour.*, August, 1890.

FOR TAN AND FRECKLES.

Dr. Chevasses' preparation for tan, freckles, pimples, etc. :—

℞ Rose-water,	. .	6 ounces.
Glycerin,	. . .	½ ounce.
Bitter-almond water,		
Tinct. benzoin,	āā	2½ drachms.
Borax,	. . .	1½ "

Rub the borax with the glycerin, gradually adding the rose- and almond-waters; lastly, add the tincture benzoin, agitating constantly. Apply night and morning.—*N. E. Medical Monthly; Med. World*, August, 1890.

A "COMPLEXION" LOZENGE.

℞ Milk of sulphur,	. .	5 grains.
Resin of podophyllin,	.	⅙ grain.
Cream of tartar,	. .	1 "

For one tablet. Sig.: One, night and morning. —*Med. World*, August, 1890.

TREATMENT OF HÆMOPTYSIS.

The Canada Medical Record advises the use of the following mixture in hæmoptysis :—

℞ Tr. digitalis,	. . . .	℥iss.
Ol. terebinth.,	. . .	℥iij.
Ol. menth. pip.,	. . .	♏xx.
Acid. sulph. arom.,	. .	℥iij.
Spt. vin. rect.,	. q. s. ad	℥xvj.

M. Sig.: Forty to sixty drops well mixed with sugar, to which one or more tablespoonfuls of water may be added every two, three, or four hours, according to the urgency of hæmorrhage. —*Med. World*, August, 1890.

FOR OZÆNA.

The nasal injections of warm sulphur-water and the following solution :—

℞ Creolin, . . . 1 gramme.
Pure alcohol, . . 120 grammes.

M. Sig.: Put a teaspoonful of this into a quart of warm water, and use the nasal douche, one-half at a time only.

In regard to nasal douches, it is now thought best not to inject more than a pint at a sitting, and to instruct the patient to keep the head erect, and in blowing the nose only to blow out one side at a time, keeping the other closed; this prevents strain on the vessels and resulting hæmorrhage.—*N. E. Med. Monthly; Med. World*, August, 1890.

THE NEW METHODS OF TREATMENT IN ERYSIPELAS.

1. METHOD OF ROSENBACH.—Consists in first washing with soap not only the affected part, but the surrounding healthy skin, then applying, each day, a solution of carbolic acid (5 per cent.) dissolved in absolute alcohol. Results, very brilliant as regards both the progress of the malady and the febrile phenomena. The use of absolute alcohol by itself has also produced favorable results.

2. METHOD OF NOLTI.—The affected parts and surrounding skin are covered twice daily with mucilage of gum arabic, mixed with from 3 to 5 per cent. of carbolic acid. Results good.

Dr. Ebstein mixes the carbolic acid with vaseline.

3. METHOD OF KOCH.—By means of a soft brush, we apply a thin and regular covering of the following pomade :—

℞ Creolin, . . . 1 gramme.
Iodoform, . . . 4 grammes.
Lanolin, . . . 10 "

The parts are then covered with leaves of gutta-percha. This has given good results, especially in erysipelas of the face and head.

4. METHOD OF NUSSBAUM AND BRUNN.—Ichthyol, with or without collodion. Results favorable, and very prompt.

5. METHOD OF HALLOPEAU.—A solution of 1 to 20 of salicylate of soda is soaked in a mask of several thicknesses of linen and applied over the parts, after which it is covered with rubber bands, to prevent evaporation. Relief almost immediate; cure in from three to five days.

6. METHOD OF HUETER.—Injections of a 3-per-cent. carbolic-acid solution in the healthy skin, distributed in several punctures, at 1 or 2 centimetres from the edges of the affected parts, with the following solution, recently prepared :—

℞ Carbolic acid (pure),
Absolute alcohol, āā 3 grammes.
Distilled water, . . 94 "

Very painful. Only applicable in severe cases of the head or face.

7. METHOD OF KRASKE.—Scarify the edges before application of the antiseptic substance.

Dr. Lawenstein advises that the incisions should be made exclusively in the healthy skin, after which the parts are enveloped with a solution of carbolic acid or sublimate.

8. METHOD OF WOELFLER.—Mechanical compression by means of adhesive plaster applied on the healthy skin on the borders of the affected parts, so as to completely surround them.—*Le Bulletin Medical; Weekly Med. Rev.*, July 19, 1890.

TONSILITIS.

In cases where the inflammation is of a chronic type, the following mixture administered in tablespoonful doses every three hours is very effective :—

℞ Acid. tannic., . . 15 grains.
Tinct. iodi, . . . 2 drops.
Aquæ, ... 6 ounces.
Glycerin, . . . ½ ounce.

In cases of quinsy the formation of an abscess may be aborted by applying the following :—

℞ Acid. tannic., . . 15 grains.
Tinct. iodi, . . . 2 drops.
Acid. carbolic., . . ½ drachm.
Aquæ, ... 2½ ounces.
Glycerin, . . . ½ ounce.

—*Jour. Respiratory Organs; Med. World*, August, 1890.

CHILBLAINS.

℞ Acidi carbolici, . . . ℥j.
Tinct. iodi, ... ℥ij.
Acidi tannici, . . . ℥j.
Cerat. simp., . . . ℥iv.

M. bene et ft. ungt. Sig.: Apply two or three times a day.—*Med. Calendar; Med. World*, August, 1890.

ARISTOL IN GYNÆCOLOGY.

Dr. G. (Gazette de Gynécologie) confirms the results obtained by Swiecicki, Veiner,

Rohier, and others, with the use of this drug in endometritis and ulceration of the cervix. Swiecicki employed the drug in a 10 per-cent. solution in oil, into which tampons were dipped and placed in the vaginal vault; he also used suppositories of the drug introduced into the uterine cavity. With this method rapid results were achieved in ulcerations, endometritis, and eczema of the vulva. Aristol is absolutely free from all irritating properties, neutral in reaction, free from odor, and seems to have much the same action upon ulcerations and inflamed mucous surfaces as iodoform, only to a greater degree. In practical gynæcology it may be employed in powder, carried to the part upon small tampons of cotton. In one case of epithelioma of the cervix it was employed with prompt relief of the hæmorrhage, disappearance of fœtor, and the part presented a clean granular surface. In endometritis, suppositories may be used containing 1 grain of the drug.

"One single point is to be especially observed if the best results are to be obtained in the use of this new product; it should never be confounded with iodo-thymol and biniodide of thymol, the former of which it closely resembles. The last substance contains alkaline iodides that are irritating to wounds and mucous membranes."—*Jour. Amer. Med. Asso.*, August 9, 1890.

RESORCINE IN WHOOPING-COUGH.

After trying cocaine in 2 cases of whooping-cough, the author began the use of the 2-per-cent. solution of resorcine with a compressed-air apparatus. It was sprayed into the nose, the pharynx, and larynx every two hours. The first day he noticed but little change, but the younger child slept from 11 at night till 4 in the morning without coughing. The next day the paroxysms were much less frequent, and the children slept practically all night, and by the fourth day the cough had disappeared and the children were perfectly well. The atomizations were continued for a few days as a precaution, but there was no return of the cough, and the children remained in perfect health. For the younger child he also used at night what is called cresoline, apparently an impure creasote. He heated this over a lamp and the dense fumes, smelling like carbolic acid, filled the room.

The symptoms of both cases were so marked that the diagnosis was certain. Other cases from the same school, less severe, lasted over two months, whereas these two cases were apparently aborted by the treatment. He had charge of two other young children soon after, one 6 and the other 2. He showed the mother how to use the atomizer, and these cases were very soon relieved. The mother told him that the cough was practically gone in a week after treatment was begun, while three children in the next house continued to cough for two months. In all cases the relief was immediate and very marked, the disease seeming to be choked off.—*Med. Analectic and Epitome.*

TERPIN HYDRATE IN WHOOPING COUGH.

Dr. Manasse recommends, in the Therapeutische Monatshefte, the use of terpin hydrate as a remedy for whooping cough. He used it with success in 41 cases, giving it to young children even under a year old, in daily doses of 22 grains; the average dose in powder form was 7 to 15 grains three times a day. He claims to have observed, after four or five days of the treatment, a distinct decrease in the number and intensity of the attacks.—*Med. Summary*, July, 1890.

SALICYOL IN PARASITIC SKIN TROUBLES.

When salicylic acid is dissolved in from 35 to 40 times its weight of warmed oil, a solution is made which does not precipitate after cooling, and to which Räude has given the name salicyol. The preparation has been found to have remarkable properties in certain forms of skin troubles, notably those caused by animal parasites.—*Med. Brief, New Remedies.*

MOLES ON THE FACE.

The Cincinnati Lancet Clinic for May 31st says that moles on the face may be painted with the sodium ethylate, a fine glass rod being used. When the mole has a varnished look the ethylate is gently rubbed in with the glass rod, to make it penetrate more deeply. The mole turns nearly black and a hard crust forms over it, which is nearly three weeks in becoming detached. When it comes off the mole is much lighter than before, and this treatment can be continued until the mark is scarcely noticeable.—*Coll. and Clin. Rec.*

THE TREATMENT OF RINGWORM OF THE SCALP.

Unna, of Hamburg (Monatshft. f. p. Dermat., 1889, ix, 543), is surprised at the slowness with which the English and French physicians effect a cure of their ringworm cases. To him the matter is very simple, and

he scarcely ever fails to cure a case within five weeks. This is truly good news, and this is the way that the cure is done: All the hair is cut off short from the head. Then a strip of zinc-glue (*zinkleim*) is drawn along the line of the hair all around the head. All inside of this boundary-line is painted with a 5- to 10-per-cent. chrysarobin ointment, or one composed of chrysarobin, 25 grains; salicylic acid, 10 grains; ichthyol, 25 grains; and simple ointment, 1 ounce. An impervious cap of gutta percha tissue is fitted over the head so as to come down to the middle of the band of glue, its edge covered in with the *zinkleim*, and a mull bandage. Over all comes a close-fitting flannel cap which is to be kept in place by bands sewed on to it. The bandage and dressings are to be changed every twenty-four hours. This method of dressing prevents the chrysarobin from getting into the eyes, and absolutely takes away all danger of spreading contagion, so that the child can go to school. After three days the chrysarobin is washed off and a 5-per-cent. ichthyol or sulphur ointment substituted for it. At the end of a week the whole head is to be oiled and washed with soap and water. The process is to be repeated every week for three or four weeks. Before the treatment is begun, and at the commencement of each new course, a number of hairs are to be pulled and cultivated according to bacteriological methods, in order to show the progress of the case. Week by week the spore formation will be seen to be lessened to the final cure.

Hydronaphthol is brought forward by Dr. Dockrell, of London, as a specific in ringworm (Lancet, 1889, ii, 1110). He says that it has been proved by experiment to be more active than bichloride of mercury as a parasiticide, and, as it is at the same time non-poisonous and non-irritant, it is an ideal remedy for ringworm. He uses the hydronaphthol plaster of 10- to 20-per-cent. strength, as that serves at once to limit the spread of the disease and causes penetration of the remedy. His method is to shave the head and wash it with a 5-per-cent. hydronaphthol soap and very hot water; then dry the scalp and apply a 10-per-cent. plaster in narrow strips overlapping each other at the edges and going beyond the diseased area. Outside of all he applies a 10-per-cent. melted hydronaphthol jelly so as to shut out the oxygen. At the end of four days he removes the plaster and repeats the previous processes, using a 20-per-cent. plaster for one week. Then he repeats the processes and applies a 10-per-cent. plaster for ten days, when the disease will be found cured. During the treatment he applies a 5-per-cent. hydronaphthol ointment to the unaffected parts.—*N. Y. Med. Journal; Med. Age*, July 10, 1890.

TREATMENT OF RINGWORM.

Mr. Jonathan Hutchinson (Archives of Surgery, January, 1890) says: "I have gradually, after trials of many other remedies, settled down in tolerable content upon a plan which relies chiefly upon chrysophanic acid. My prescription, with the very rarest exceptions, is as follows: The liquor carbonis detergens (Wright's) is used as a wash in the proportion of a teaspoonful to a pint of hot water. With this the scalp is to be well washed twice a week, and all scales and crusts removed. The hair is to be shaved or cut close. The curative ointment, which is to be rubbed in more or less freely, according to its effects, night and morning, or every night only, by the same rule, is composed as follows:—

"℞ Acid. chrysophanic., . . ʒj.
Hydr. amm. chl., . . . gr. xx.
Lanolin, ... ʒj.
Adip. benzoæ, . . . ʒvj.
Liq. carb. deterg., . . . ♏x.
Misce fiat ung."

Mr. Hutchinson remarks that the secret of success in treating ringworm consists in the patient continuance of the same remedy. He usually promises a cure to the persevering, but never a rapid one. It is only the impatient who are disappointed. Mr. H. has no faith in the rapid cure of ringworm.—*Montreal Med. Journal*, August, 1890.

SALVE FOR LUMBO ABDOMINAL NEURALGIA.

℞ Acid. salicyl., . . 2½ drachms.
Camph. pulverized with
ether, . . . 1½ "
Vaseline, . . . 11 "

M. Sig.: Rub slowly a piece as large as a nut into the lumbo-sacral region morning and evening.

This salve will be found useful in neuralgia connected with uterine affections in rheumatic subjects. After the rubbing, which should be prolonged, the painful region must be covered by a piece of flannel, over which is placed some rubber cloth.—*L' Union Médicale; Weekly Medical Review*, August 9, 1890.

THE
Medical Bulletin.

JOHN V. SHOEMAKER, A.M., M.D., Editor.
F. A. DAVIS, Publisher.
S. C. BERGER, Business Manager.

Philadelphia, Oct., 1890.

THE INTERNATIONAL MEDICAL CONGRESS.

THE Tenth International Congress is a thing of the past, and its proceedings belong to medical history. An immense concourse of physicians from all portions of the world gathered in the city of Berlin in early August. The number of those in attendance much exceeded that of any preceding meeting. As should be expected from the place in which it was held, the large majority of members were Germans. Next to Germany the United States sent the largest delegation. The presiding officer of the Association was the illustrious Professor Virchow, who spoke in his opening address of the peaceful triumphs of the medical art, the humanitarian career of our profession, the medical corps of the German army, the sanitary condition of Berlin, and the love of the Germans for peace. They wish to live in peace with the whole world, so that they may be able to pursue the tasks of science and the aims of humanity undisturbed, and after their own fashion. The General Secretary followed with a report, in which he stated that 25 governments, 30 universities, and 50 learned societies had sent official representatives.

The first general meeting was addressed by Sir Joseph Lister and Professor Robert Koch. The essence of Sir Joseph's discourse was an ample recognition of the defensive powers of the animal organism against the development of disease-germs. He believes that we should admit as proven the truth of Metchnikoff's views in relation to the "phagocytic" properties of the white blood-cells. The latter organisms envelop, feed upon, and destroy bacteria with which they come into contact. Hence, to a certain extent, they prevent or mitigate infectious processes. This seems to be the explanation of the experiments communicated by the speaker to the London Congress in 1881, viz., experiments which proved that normal blood and serum, and even pus, "are by no means favorable soils for the growth of microbes in the form in which they are present in the air." As a practical corollary from these conclusions the uselessness of the abandoned custom of spraying is obvious. If the inefficiency of washing or irrigating wounds with antiseptic solutions is not at present equally obvious, Sir Joseph confesses, at any rate, that he has for a long time doubted the necessity of these procedures. The all-important point now appears to be that the surgeon and his assistants should scrupulously avoid the introduction into the wound of morbific germs from other than atmospheric sources. "But if," adds he, "besides the spray we give up all washing and irrigation of the wound, our vigilance must be redoubled." Where considerable discharge exists, the dressing should be of a kind to exclude septic organisms, and for this purpose he prefers a combination of the two cyanides of zinc and mercury.

Professor Koch dwelt upon the rapid development of bacteriology, insisted upon the fixity of bacterial species, though he admitted the difficulty with which these species are determined. He cautioned his hearers against hasty conclusions, and, in illustration, related a course of experiments which he had carried on with tubercle bacilli derived from different sources. Differing from Lister, Koch believes that immunity from infection is not due principally to the phagocytes, but that here also chemical processes are principally concerned. The influence of temperature, light, moisture, chemical agents, etc., upon the development of bacteria were next passed in brief review, and the surprising fact noticed that industrious research has failed to demonstrate the causative micro-organisms of a class of diseases which are emphatically infectious, *e.g.*, the exanthemata. The concluding portion of the address related to the subject of the practical effect of our present knowledge of bacteriology upon the management of actually-developed disease. Though comparatively barren as yet, he is not without reasonable expectation that our knowledge of the cause of an infection will ultimately lead to measures which will enable us

to destroy the cause, or, at all events, inhibit its action.

The second general meeting was addressed by M. Bouchard, of Paris; Dr. H. C. Wood, of Philadelphia; and Axel Key, of Stockholm. The first named gentleman discussed the theory of infection, treating of the manner in which the animal organism affects microbes, of phagocytism, of the "bactericidal condition," and, on the other hand, of the processes by which microbes influence the animal organism, of bacterial products which provoke and those which oppose diapedesis, of "vaccine" secretions, and of immunity. Dr. Wood spoke of his studies and conclusions upon the important subject of anæsthesia, while Dr. Key treated of the development of puberty and its relation to morbid phenomena among the young. Before the Section of Medicine valuable papers were read by Dr. T. Grainger Stewart, on the treatment of chronic Bright's disease, and by Dr. Pavy, on the treatment of diabetes mellitus. The former laid stress upon the fact that very much more is to be gained by dietetic treatment than by any plan of medication whatsoever. A low diet and milk were especially commended, and the dangers of gastric disturbances and constipation are best obviated by giving the milk diluted with water and not in too large quantities. None is better qualified to speak of diabetes than Dr. Pavy. He pointed out that the two *desiderata* are to control the passage of sugar through the system and to restore the assimilative power over the carbohydrates of the food. The former object is to be attained by dietetic means, while opium and its alkaloids, morphine and codeine, he believes to be most efficient in accomplishing the latter purpose.

Of the numerous learned papers presented to the various sections it is manifestly impossible to give any account here, since the titles of communications alone are sufficient to fill a book of 70 pages, and more than 700 addresses were announced. We will merely permit ourselves to allude to Professor Senn's masterly demonstration of his method of locating shot wounds of the intestinal canal.

The main object of an International Congress is the advancement of the science and art of Medicine and the diffusion of professional knowledge. It is fitting, too, that the social element should be duly recognized. Though not the prime object of the meeting, yet it is perfectly natural and proper that the opportunity should be seized for renewing old friendships, for forming new acquaintances, and for indulging in that relaxation which no class of men, perhaps, need more or enjoy more than physicians. Nevertheless, it is not fitting that scientific men should seek Berlin mainly for the sake of eating and drinking to repletion, though the excessive conviviality which prevailed might encourage the thought that the entertainments were to many the chief features of the Congress. As to court receptions, they are of the least interest to intelligent and self-respecting Americans. In this country every man is inclined to think himself a prince—or as good as one, at least—and the excessive pomp, exclusiveness, etiquette, and condescension which surround European thrones are unattractive to republican simplicity.

To provide for the reception, registration, entertainment, and comfort of 7000 guests is, indeed, a herculean task, and may well strain the resources and the energy of any committee or secretary-general. The heat of the weather, moreover, was an obstacle to hosts and guests alike, as some of the buildings in which sectional meetings were held were as hot as bake-ovens, and men were tempted to desert Esculapius for Gambrinus. It is not strange that, under such circumstances, troublesome defects in the arrangement of details should become painfully apparent. That members should be driven from pillar to post, from one end of a large and strange city to another in search of tickets on hot August days, to the serious detriment of patience and peace of mind, is much to be regretted. That invitations to certain "functions" should be so sparingly distributed elicited general disapproval among delegates. That members should converse in an audible tone of voice or leave the hall because they did not understand the speaker's language is, to say the least, disconcerting.

In spite of these and other irritating drawbacks which might be mentioned, the character of the addresses, papers, and discussions justifies us in pronouncing the meeting of 1890 to be a marked succes.

PREVENTIVE VACCINATION.

THIS term has lately acquired a notable extension of meaning, and the luminous thought has taken possession of many of the best minds of the profession that the principle of vaccination may be applied to other infections than small-pox. Upon this line much research and speculation is now taking place. It is difficult to fight against the conviction that, in the proposition to prevent severe infection from strong virus by purposely inducing a mild infection from weakened virus, with subsequent immunity as the result, a great truth lies hidden. The theory is not yet triumphantly verified, perhaps; the truth is still concealed, or but partially revealed, yet enough has been discovered to give fair encouragement for future progress. Biological truths are not always easily discovered, yet the halting steps with which knowledge advances remind us of the saying that "the race is not always to the swift."

That erudition is vastly different to sagacious judgment we may learn from the life of many a German student—let us say, for instance, Samuel Christian Friedrich Hahnemann. Strange as the fact may be, it is nevertheless true that too great an absorption in book lore often serves merely to embarrass the mind. It is less the acquisition of an immense stock of facts than an appreciation of the comparative worth of those facts that constitutes true knowledge. We are often led to believe that a study of the principles of logic would favorably influence the conclusions or the hypotheses of certain medical writers.

Most subjects can be considered from different points of view, and to disentangle the evidence for and against a theory of physiology, pathology, or medical practice, is, it must be confessed, a difficult task. As regards the last, indeed, results will generally speak for themselves. Yet how keen and exact needs to be the judgment in order to observe the mean between rash innovation and blind conservatism, the history of many a remedy, many a plan of treatment will show. Reactionary or obstructive criticism does at least this much good, that it compels a constant examination of the ground, that it acts as a check to ill-considered advance, and necessitates the utmost caution in assumptions or deductions. It is never able to impede seriously the march of science. The history of intellectual development shows that every great reform has had to encounter resistance. Opinions held too fondly, indisposition to retract prior statements, sheer mental indolence, eccentricity, or perversity, are among the factors, not to mention others still less creditable, which cause each forward step to be accompanied by a running fire of controversy. In the sixteenth century the efforts of Vesalius to place the study of anatomy on an assured basis were strenuously resisted by his bigoted contemporaries, among his most vigorous opponents being his former master, Jacques Dubois, in his day the leading anatomist of Paris, but a devoted follower of Galen. A century or so later and Harvey's discovery was fiercely assailed, and Riolan, if our memory deceive us not, went to the grave unable to see the truth. Our age, full of an itch for novelty, leans rather to the other extreme, and new doctrines and remedies are often promulgated with unreasoning and short-lived zeal. Yet, that human nature is ever substantially the same is shown by some recent strictures upon vaccination for small-pox. If anything in medical practice could be regarded as finally settled by the testimony of overwhelming experience of a century's duration, it would be the inestimable value of vaccination as a prophylactic measure. A century ago epidemics of small-pox raged like the plague. Countless graves, scarred faces, and sightless eyes were grim evidences of its power. To-day, thanks to vaccination, epidemics are neither so frequent nor so virulent; the blinded orbs and the pock-marked face are comparatively rare. Notwithstanding these patent facts, we may still hear the efficacy of vaccination denied. And, to crown the marvel, not only uninstructed or crack-brained laymen, but medical men of high reputation, misled by fatal subtlety and learned ignorance, put forth an astounding array of figures, assertions, and arguments intended to deny the usefulness and overthrow the practice of vaccination. In vain shall Creighton and Crookshank issue forth writings still-born from the press, while every sound, common-sense practitioner, whose mental

vision is not too refined to see what lies plainly before him, quietly continues his unpretentious course of vaccination and revaccination.

It is the hope of many that means will be found of averting the development of other infections. Experiments on a great scale with this end in view have been conducted for a few years past by M. Pasteur, whose success with anthrax justifies the anticipation that his treatment of rabies is founded on rational principles and will ultimately convince the most prejudiced opponent. We are not especially concerned to defend or advocate the methods of M. Pasteur. What is true must finally prevail, despite all opposition. But in the presence of actual experimental effort with apparent marked success in the treatment of one of the most terrible maladies known to man,—one, moreever, not so very infrequent,—carping criticism and mere theoretical argument is frivolous. It may be worse, it may be fatal, if it lead to neglect of what certainly offers a more reasonable defense against hydrophobia than any other known treatment.

In another column we reproduce for our readers a rather peppery correspondence which appeared in the English journals during the past summer.

CORRESPONDENCE.

A REBUTTAL REBUTTED.

To the Editor of the Medical Bulletin:—

I beg leave to say to Dr. Wallace that he is a little "off" in his rebuttal, as I have never had but one child-bearing negress under 17 years of age; that some of my leucorrhœal patients were unmarried; some had no children; some but two or three, and none that large family of which he speaks. Several women complained of the amorousness of their husbands, etc. Quite a number had syringes, and could manipulate them very well, too, and thought well of them.

In reference to charges, I had allusion only to the St. Nicholas district across the river St. John's, and two miles from the Jacksonville ferry. I was told by all residents, white and black, that they could not get a "city doctor" over there for less than $5 per single visit, and several white people had to pay more who lived two or three miles further.

I have no doubt that the "country doctors" down in Florida are no better paid than many rural doctors in Pennsylvania.

I never make a mis-statement to carry or make a point.

DR. A. LIVEZEY.

N. B.—I know nothing of the "ignorant and superstitious class" of which he speaks. Most of my patients belonged to a beneficial society, had a respectable hall, paid reasonable bills promptly, and I had as much satisfaction in doctoring among them as any lot of patients I ever had, and I entered the profession in 1845! I should add that most of them were chronic cases, and consequently office patients.

PASTEUR AND HYDROPHOBIA.

To the Editor of the Provincial Medical Journal:

SIR:—My attention has been drawn to a popular article on "M. Pasteur and Hydrophobia," written by you, in the Contemporary Review for July, 1890.

I took the trouble to correct, in the British Medical Journal in September, 1886, numerous erroneous statements which you published on the same subject, and am consequently surprised to see them re-appear, to the easy misleading of a public imperfectly educated in medical and scientific matters. That such a re-publication of statements, the incorrectness of which has been demonstrated, has not occurred unintentionally is unfortunately made unmistakably clear by the manner in which you have taken isolated portions of my evidence before the House of Lords Committee to support your contentions. On February 13, 1889, I read a paper on the subject before the Epidemiological Society. You were present. I therein proved that the death-rate of those bitten by unquestionably rabid dogs was 15 per cent., whereas the death-rate among the same class of patients, when treated by M. Pasteur, was less then 1.6 per cent.

You quote (page 92) general statements of mine in which I explained to the House of Lords Committee that a very large proportion of human beings who are bitten by rabid dogs do not become rabid; but I would ask why, in this connection, you have suppressed the facts given above, and instead of the whole truth have only given a part, which thus presented alone is most misleading.

I will only conclude by inviting you to repeat your mis-statements in a medical journal, or before a medical or scientific society, where they can receive the correction they urgently need, instead of before a public necessarily ignorant upon such matters. Faithfully yours,

VICTOR HORSLEY.

To T. M. Dolan, Esq., M.D.

[REPLY.]

DEAR SIR:—In reply to your letter of July 17th, I have the following observations to make:

1. M. Pasteur in a popular magazine, the New Review, appealed "to a public imperfectly educated in medical and scientific matters" in support of his system.

2. I have demonstrated, with the precision of a mathematical problem, the fallacies of the method, in another popular review, and only the most blinded partisan can refuse to accept my conclusions. I was not the first to appeal to a general public "necessarily ignorant on such matters." I think you rather under-estimate the intelligence of the public to which you and the Pasteurians did not hesitate to appeal at the Mansion House meeting.

3. You have, it is true, contradicted my statements in the British Medical Journal, and you have ostentatiously labelled your own opinions as facts. I decline to accept your observations as a settlement of the questions at issue. I prefer, even to your opinions, those of Professor Peter (Paris), Professor Billroth (Vienna), Professor Abieu (Portugal), Professors De Renzi and Amoroso (Naples), Professor von Frisch (Vienna), Dr. B. W. Richardson (London), Vincent Richards (Calcutta), Dulles (Philadelphia), Herman Biggs (New York), etc. If I err, I err in very good company.

4. I quoted your words under a special heading. They are absolutely correct. There is no suppression on the point at issue, and there was no necessity to bring in another subject.

5. If you will point out any individual misstatements in my article in the Contemporary in connection with your name, I shall be obliged, and can then deal with them.

6. You can, by manipulation of figures, prove to your own satisfaction that M. Pasteur has saved 900 or 2000 lives, or reduced the mortality from 15 to 16 per cent. You might as well have said that he had reduced it from 65 or 93 to 1 per cent. I have no doubt you were satisfied with your figures as given to the Epidemiological Society. I was present, and was not satisfied except on one point, viz., to find that you agreed to an old opinion of mine expressed in the Practitioner of 1881, and contained in a Dog Act (which has since been copied), that rigorous police measures should be sufficient to keep down rabies, and the accompanying mortality from hydrophobia.

7. I cannot repeat "mis-statements," as I have not made any; but I am quite prepared to substantiate my opinions in medical journals, or at scientific societies should occasion arise.

The problem now resolves itself, apart from all "enebriation" of figures, into a simple one: "Has M. Pasteur reduced the mortality from hydrophobia in a given district, the department of the Seine, where he has been operating under the most favorable conditions?" The answer is given by the death-rate, published by Dr. Dujardin-Beaumetz. If you care to defend this at the Congress at Berlin, I shall reply to you in the negative. I desire to speak out plainly, and I now take the trouble to tell you—I hope for the last time—that any little efforts I can render to humanity to rid them of this incubus in the shape of Pasteurism shall be readily and gladly given, for I am convinced that so far from lessening the sum of human misery caused by hydrophobia, Pasteur has increased it. Wherever a Pasteur Institute has sprung up the number of supposed rabid animals has increased; the number of dogs bitten has increased; the fear and misery caused by dog-bites have been intensified; whilst I need not say that the brute-creation has fared even worse. I commend to your attention the opinion of the editor of the New York Medical Record on the establishment recently opened at New York. I hope my efforts in the Contemporary may do some good to counteract the propagandism in favor of the Pasteurian system initiated in the lay press by Pasteur himself and his adherents. I remain yours very faithfully,

THOMAS M. DOLAN.

To Victor Horsley, Esq.

PASTEUR AND HYDROPHOBIA.

To the Editor of the Provincial Medical Journal:

SIR:—By way of answering the letter in which I exposed your misrepresentations of my statements, you make a fresh assertion of equally erroneous character, viz., "that I ostentatiously label my opinions as facts." Since your memory of the facts, not opinions, given in the paper, at the reading of which you admit you were present, has apparently failed you, I advise you to honestly refer to it; but after such double and deliberate misrepresentation on your part I can take no further part in this correspondence.

Faithfully yours,

VICTOR HORSLEY.

[REPLY.]

SIR:—We are evidently arguing in a circle. I must, however, correct you.

a. I did not say in my letter "you ostentatiously labelled your opinions facts" at the Epidemiological Society. I said you did so in your letters in reply in the British Medical Journal (*vide* paragraph 3 in my letter).

b. Not only was I present at the meeting at the Epidemiological Society, but (to refresh your memory) I spoke. I told the meeting, what it knew, that I was an absolute unbeliever. I said: "I was, however, glad to find we were in agreement on the value of police measures." I carried the president's recollection back to the Con-

gress of 1881, to the paper read by Dr. Van Cappelle, who proved then (what you have since put forward in your original way) that rigorous police measures were sufficient to keep down rabies—a fact known to all students of the disease. I told the meeting, in fact, that you were giving old wine in a new bottle. Dr. Thorne, the president, admitted at the meeting the accuracy of my reference to the Congress. Sir William Moore was next me, and he can confirm the accuracy of this statement, viz., that neither tacitly nor openly did I admit your calculations, or, if you choose, your "facts" on the value of Pasteur's experiments. So far as I am concerned, *causa finita est*, and I certainly shall not take any notice of any further communication from you. You have threatened me with the publication of your letter in the medical press, and have made some general charges which you have not substantiated. I gratify your appeal to the press. Those who read the letters can decide on the merits of the controversy which you initiated.

Yours very faithfully,

THOS. M. DOLAN.

Victor Horsley, Esq., F.R.S.

ERGOT IN PNEUMONIA.

To the Editor of the Medical Bulletin:—

DEAR SIR:—In the August BULLETIN I notice a report, taken from the Canada Lancet, of the successful use of ergot in pneumonia, by Dr. F. Winnett, of Toronto. He says he can find no mention of this use of ergot in any of the text-books of medicine or therapeutics. Dr. E. F. Ingals, of Chicago, in his work on "Diseases of the Throat, Chest and Nasal Cavities," page 126, speaking of the treatment of lobar pneumonia, says: "During the first 3 or 4 days . . . f. e. of ergot should be given in doses of 3ss every 3 or 4 hours." Napheys' "Medical Therapeutics," page 207, mentions ergot as a remedy in this disease; also in Dunglison's "New Remedies," edition of 1856, the same use is reported.

In my own practice I have used ergot in the treatment of pneumonia in all my cases for the past twelve years, and consider it one of the most reliable remedies in that disease.

L. L. LEEDS, M.D.

LINCOLN, ILLINOIS, Aug. 4, 1890.

PRIZES.—The Barcelona Medical and Surgical Academy has offered a prize of 1500 pesetas for an essay on the treatment of acute febrile processes, with especial reference to the use of antipyretics. The second best essay receives 750 pesetas.

DR. LEWIS A. SAYRE has recently been elected an honorary member of the St. Petersburg Medical Society, one of the largest and most important of the Russian societies.

MEDICAL NEWS AND MISCELLANY.

DR. SAMUEL WOLFE has removed to 828 North Seventh Street, Philadelphia.

DR. R. HARRY HESS, of Jonestown, Lebanon Co., Pa., has recently been visiting this city.

MRS. HACKETT STEVENSON, M.D., of Chicago, is visiting this city.

DR. G. BETTON MASSEY has removed his offices and Sanitarium to 212 South Fifteenth Street, Philadelphia.

DR. J. V. SHOEMAKER arrived home September 2d from his attendance at the meetings of the British Medical Association and International Medical Congress.

TRI-STATE MEDICAL ASSOCIATION OF ALABAMA, GEORGIA, AND TENNESSEE.—The next meeting will be held in Chattanooga, Tuesday, October 14, 1890, and will continue in session two or three days.

THE THIRTY-SECOND SANITARY CONVENTION was held under the auspices of the State Board of Health, Thursday and Friday, August 14th and 15th, 1890, at Lewis' Opera House, Charlevoix, Michigan.

THE PHILADELPHIA COLLEGE PRIZE AWARD.—The Alvarenga prize of the College of Physicians of Philadelphia, consisting of one year's income of the bequest of the late Dr. Alvarenga, of Lisbon, has been awarded to Dr. R. W. Philip, of the Victoria Dispensary for Consumption at Edinburgh, for his essay on pulmonary tuberculosis, which will presently be published by the College.

CASTRATED SINGERS.—A Frenchman once remarked that he could not accustom his ears to the voices of castrated singers. This reminds one of the young lady who went to hear the eunuch Carestini sing. The whole world was praising his voice, but this girl remarked ingenuously: "He has a fine voice, but there is something wanting about him."—*Lancet Clinic.*

RATHER PUZZLING.—*Economical Lady Customer:* "You remember making up a bottle of medicine for me last week, Mr. Jones, from Dr. Smith's prescription?"

Chemist (with anticipations of a profitable transaction). "Certainly, madam; we have a copy of the prescription."

Lady: Ah! well, the medicine quite cured me before I had taken half of it. What I called to ask you was whether you could allow me anything for what I have left?"

Druggist struggles with his emotion, but has not yet hit on a suitable answer.

MISINFORMED.—*Mrs. McCorkle*—"What is your son doing now, Mrs. McCrackle?"

Mrs. McCrackle—"He is a pharmacist."

Mrs. McCorkle—"A farm assist, is he? Why, I heerd some one say he was clerking in a drug-store."

WILLING TO TRUST POSTERITY.—A surgeon was called to see a rich but miserly patient, whom he found suffering from advanced cancer of the stomach.

"And what are you going to charge me for treatment, doctor?"

"Nothing; not a cent," was the reply.

"Oh, how generous! How can I thank you?" said the patient.

"No necessity for thanks, my friend, *your heirs* will see that I am paid."

IT WASN'T HIS TOOTH.—*Countryman to Dentist:* "I wouldn't pay nothing extra for gas. Just lug her out. Never mind if it does hurt."

Dentist: "Well, you are plucky, sir. Let me see the tooth."

Countryman: "Oh, 'tain't me that's got the toothache; it's my wife. She will be here in a minute."—*Dental Register.*

A MORE IMPORTANT CASE.—*Hackman:* "Is the doctor at home?"

Bridget: "Yes sir; he's out in the back yard killing a chicken."

Hackman: "Call 'im in; I've got bigger game."—*Dixie Doctor.*

A VERY successful meeting of the "Association of Obstetricians and Gynecologists" was held in this city on the 16th, 17th, and 18th of September. The sessions, at which a number of valuable papers were read, were attended by many physicians resident in the city, in addition to the members of the Association. On Tuesday evening, September 16th, a reception was extended to the visiting members and the local profession by the President, Dr. E. E. Montgomery, at his residence, 1818 Arch Street. The thronged rooms, the cordial greeting of friends, the buzz of animated conversation, testified to the appreciation by the guests of the refined and dignified hospitality of their entertainer.

AMENITIES OF MEDICAL PRACTICE IN SOUTH AFRICA.—A native medicine-man in South Africa has just had an experience which should convey a moral to his colleagues. The favorite wife of one of the chiefs in the district was taken very ill, and the medicine-man declared that the only cure was the ingestion of fat from the human heart. The chief, on looking around him, concluded that the heart of the doctor was most likely to furnish the amount of fat required, and ordered him to be killed, which order was promptly obeyed, and the fat of the heart given to the afflicted chieftainess. The other parts of the body usually eaten by cannibals were, it is said, eaten by the healthy members of the chief's household. The inhuman chief has been placed under arrest by the district magistrate pending a full inquiry by the Government officials.—*Hospital Gazette; Med. Record*, Aug. 23, 1890.

THE VALUE OF MALTINE IN DIARRHŒA.—In case of looseness of the bowels, a few doses of the ordinary chalk mixture will usually furnish the desired relief. This should be given in tablespoonful doses, and after every stool. Where there is a weakening of vitality, with very great propriety and advantage, teaspoonful doses of maltine may be added to the sterilized milk; the diastatic power of maltine being capable of rendering soluble and digestible any starchy food that may be in the stomach. Starch foods, such as Irish potatoes and breads, have often been regarded as the immediate and irritating cause of infantile enteric disorders. In part this may be true, and yet these starch foods were the very ones the lacteals and absorbents were crying for, and needed to stay the waste that was going on with fatal rapidity.

Right here the inestimable value of maltine, with its diastatic solvent properties, is quickly made manifest in changing the character of the discharges, and causing an irritant factor to become one of nutrition; given in sterilized milk the benefit of both is obtained.—*Cincinnati Lancet-Clinic*, July 5, 1890.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION will hold its Sixteenth Annual Session at Louisville, October 8, 9, 10, 1890. Dr. John A. Wyeth, of New York, will deliver the address on Surgery. Dr. Woodbury, of Philadelphia, will read a paper, and a large number of prominent medical men of the Mississippi Valley will be there with interesting papers. The prospects are that the coming meeting will be the best attended as well as the best all-around meeting of the Association's many good sessions. The social arrangements are being pushed to the completeness that only Kentucky hospitality can suggest. The physicians and accompanying ladies will have nothing to complain of on that score. The M. V. M. A. is the outgrowth of the old tri-State society, comprised of Indiana, Illinois, and Kentucky, and embraces a much wider territory, drawing from the north, south, east and west. The officers are: Dr. Joseph M. Matthews, Louisville, President; Dr. E. S. McKee, Cincinnati, Secretary; Dr. I. N. Bloom, Louisville, Chairman Committee of Arrangements. The American Rhinological Association will hold its annual session also at the same place October 6, 7, and 8, 1890.

THE CANNIBALS OF THE OUBANGHI.—Father Augouard, apostolic pro-vicar of the Oubanghi, contributes to the Missions Catholiques the narrative of a journey which he has just made from Loango to the Oubanghi, an affluent of the Congo. In the Oubanghi country human flesh is an article of regular consumption, not a day passing without a village immolating some victim destined to provide a feast. Sometimes it is the death of a chief; at others the celebration of a victory; at other times the arrival of a piece of good news, which serves as a pretext, and one chief will vie with another to see which can immolate the most victims. These savages regard human flesh as a dainty morsel, and prefer it to any other food, considering that it is a noble kind of food, far superior to that of animals. When told that it was horrible to eat their fellow-creatures, they simply replied; "No, it is delicious with salt and spices." When Father Augouard went on to point out to them the difference between man and the animals, and to say that if they fell into the hands of their enemies they might be eaten in their turn, all that they said was that that was the fate of war, and that just as man was nobler than the animal, so his flesh was "more noble to eat."

INSTRUCTION IN MASSAGE.—A Course of Lessons in Massage and the simpler Swedish Movements will begin at the Movement Cure Hall of Dr. Benjamin Lee, 1532 Pine Street, Philadelphia, on Monday, October 6th, at 2 30 P.M. The course will extend over a period of two months, attendance daily (except Sundays), from 2.30 to 3.30 P.M. Classes will be limited to six. It is desirable that two acquaintances of the same sex should apply together, in order that they may perform the manipulations upon each other. The practical instruction will be given by a graduate of the Medico-Gymnastic Institute at Lund, Sweden. Applicants, other than physicians or medical matriculates, must present a certificate of good moral character from a respectable physician. The following text-books are recommended in connection with the course:—

Dunglison's New School Physiology and Hygiene. Cutter's First Book on Anatomy, Physiology, and Hygiene. The Theory and Practice of the Movement-Cure: by Geo. F. Taylor, A.M., M.D. A Practical Treatise on Massage: by Douglas Graham, M.D. Lee's-Reibmayr's Art of Massage, Tracts I, II, and III. Fee for the Course, $100.

THERAPEUTIC EFFECTS OF HEAT ON SYPHILIS.—Dr. K. A. P. Y. Kalashnikoff has made a series of observations on the therapeutic effects of heat on syphilis, and especially on syphilitic eruptions, his patients being inmates of a St. Petersburg lock-hospital for women and children. The heat was applied where possible by means of partial hot-air baths administered to the affected part for half an hour twice a day, the part being enveloped in hot flannel immediately afterward, and remaining so protected until the next hot-air bath. The temperature never exceeded 116° F. Where the eruption was on the back or neck, or on some part which it was impossible to insert in a hot-air chamber, India-rubber hot-water bottles, or tubes through which hot water was kept flowing, were employed. When both arms or legs were affected in a symmetrical manner the treatment was confined to one side, the other being left untreated for the purpose of comparison. The results show that, generally speaking, the heat treatment acted very energetically and beneficially on syphilides, both when employed alone, instead of mercurials and iodides, and also when used in conjunction with these remedies. Often heat proved beneficial when the ordinary specifics had failed. Among other observations it was noted that hard chancres healed and the induration disappeared in from eight to sixteen days; roseola and papular erythema disappeared in from four to eight days; various forms of papular and impetiginous syphilides, with marked pigmentation, disappeared in from eight to twenty-one days; non-ulcerated tubercles and gummata disappeared in from seven to twenty-four days, but those which had already begun to ulcerate required from one to six weeks; periostitis was cured in from ten to twenty-four days; ostoses were not affected; syphilitic ulcers, consequent on the breaking down of gummatous periostitis, required treatment of from six weeks to three months or more; and necrosis of bone frequently required many months' treatment before the sequestra could be got away.—*Therap. Gaz.*, August, 1890.

AN ANGLO-AMERICAN DINNER.—One of the most enjoyable social affairs in connection with the International Congress was a dinner given August 9th by a company of American and English physicians. Upward of sixty guests were present, the chairman being Dr. John V. Shoemaker, of the Medico-Chirurgical College and editor of this journal. The occasion was one which will long dwell in the memory of the participants. Among the list of familiar names we may mention Mr. Th. Bryant, Mr. H. Marsh, Dr. W. Murrell, of London; Dr. R. Stockman, of Edinburgh; Dr. T. M. Dolan, of Halifax; Professor Leach, of Manchester; Dr. Phillips, of London; Dr. W. Pancoast, Dr. H. E. Goodman, Dr. P. D. Keyser, of Philadelphia; Dr. J. B. Hamilton, U. S. Marine-Hospital Service; Dr. Albert L. Gihon, U. S. N.; Dr. C. H. Alden, U. S. A.; Dr. R H. Sayre, New York; Dr. E.

Landolt, of Paris; Dr. C. T. Parkes, of Chicago; Dr. A. J. Stone and Dr. J. F. Fulton, of St. Paul. Mr. Burroughs and Mr. H. Helbing, of London, and Mr. Evans, of Philadelphia, representative pharmacists, likewise graced the board; while among German friends were Professor Kobert, Dr. Ritsert, Dr. Boettger, Dr. Darmstadter, of Berlin; Dr. Berthold Beer, of Vienna, and Dr. Maximilian Bille, of Dresden. The toast-list was as follows: "King of Prussia and Emperor of Germany," Dr. Hamilton; "Queen of England and Empress of India," Mr. Burroughs; "President, United States Army and Navy," Dr. Gihon; "International Medical Congress," Dr. Landolt; "International Medical Exhibition," Dr. Dolan, Prof. Kobert, of Dorpat; "Medical Colleges and Universities," Dr. Alex. J. Stone; "Fellowship of English and American Physicians," Dr. Phillips; "International Surgery," Mr. Marsh; "International Medical and Pharmaceutical Press," Dr. Pancoast, Dr. Boettger; "Medical Authors and Publishers," Mr. Rebman; "Pharmacology and Therapeutics," Drs. Murrell and Leach; "Medical Education," Dr. Keyser and Dr. Bille; "The Physician Himself," Dr. Parkes; "Our Guests and Absent Friends," Mr. Evans; "The Ladies," Dr. Sayre.

A PRIMITIVE SURGICAL INSTRUMENT.—Mr. Carl Lumholtz, M.A., Member of the Royal Society of Sciences of Norway, undertook a few years ago an expedition to the northern parts of the continent of Australia, with the object of making collections for the zoological museum of the University of Christiania, and of instituting researches into the customs and anthropology of the Australian aborigines, who are generally accounted the lowest race of savages now existent. Mr. Lumholtz carried out his scheme most completely, living for several years with the aborigines, sharing their privations, joining in their hunting expeditions, and narrowly escaping with his life from their treacherous hands. The tribes he lived with are cannibals, and it seems certain that he would have been killed and eaten but for the fortunate circumstance that previous experiences had taught the hungry natives that the white man's flesh is not grateful to the black man's palate, and that if eaten it causes, according to their own statements, *komerbory kawan*, terrible nausea. Mr. Lumholtz survived to return to Europe and to publish an account of his travels and discoveries under the title, "Among Cannibals, an Account of Four Years' Travels in Australia, and of Camp Life with the Aborigines of Queensland" (London: John Murray).

Among the customs of these aborigines is one seldom recorded, and possessing so much curious interest of a surgical nature that it appears deserving of mention here. Certain tribes resort to the so-called mika-operation to prevent the increase of population. In a few tribes, Mr. Lumholtz states, the children are operated on, only about 5 per cent. being spared. In other tribes a husband after becoming the father of one or two children must submit to the operation, which is conducted with certain solemnities: the operation consists in making an incision into the urethra with a flint knife. The knife is made by lighting a fire on a flint rock and then pouring water on the stone; this causes it to split, and a suitable splinter is then selected. The knife has a very sharp point, and three sides, two of which are very sharp, so that the blade is two-edged. The handle is made of a lump of resin painted with a reddish-brown ochre; the knife is stuck into one end of this handle and a flat piece of wood painted with chalk figures into the other. The knife is contained in a sheath of bark bound by strong opossum-hair and ornamented by a tuft of red cockatoo-down.

The cut, which is about one inch long, extends almost to the scrotum; the surface of the wound is first burnt with hot stones, and the wound is kept apart while healing by the insertion of little sticks. In this way an artificial hypospadias is produced, and the man, it is said, has no more children. The reason for the adoption of so extraordinary a custom does not appear to be lack of sustenance, but is said to be merely a dread of having many children, who entail undesired responsibilities in the way of providing food, very distasteful to the indolent nature of the savage aborigines.—*British Med. Journal*, June 28, 1890.

BLOOD-LETTING FOR REDUCTION OF FEVER-HEAT.—Fifty years ago it was the common practice to abstract blood whenever there were symptoms of acute inflammatory fever. In these days it does not enter our minds to do anything of the kind, except in cases of a very special character. In one such case I drew blood freely under the following circumstances: I was called to visit a lady who, with symptoms of peritonitis, exhibited a temperature of 109°. Antipyretic remedies had been freely administered for several hours without any benefit, and at such an elevation of animal heat death was imminent. In the emergency I thought it right to revert to the old practice, and to give the sufferer what might be called a last chance of recovery. Although I had very often drawn blood, I had never before done so with the thermometer as a guide and a corrective, this instrument as an aid to diagnosis having come into practice since the lancet went out. It was therefore a new experience to discover what would be the immediate effect on the temperature of abstraction of blood. The blood was drawn from a vein in the arm in the usual way, and was received into a vessel holding a clinical thermometer, which, when the bulb of it

came into contact with the blood, rose rapidly to 108°. The abstraction of blood was continued until signs of exhaustion were just felt, and nearly 22 ounces were removed. For the time the urgent symptoms were greatly relieved, and the temperature of the body was brought down to 101°,—8 degrees. The improvement continued for about four hours, when, notwithstanding the administration of ice-water freely and quinine in large doses, the elevation of temperature recommenced, and continued until it again attained 109°. Shortly after, death took place, with the usual symptoms incident to increment of animal heat. The clinical lesson derivable from these observations is that, while removal of blood has the effect of reducing the febrile heat, it does not control the process of zymosis, on which the febrile condition itself depends. It does not, therefore, as a practice, stand favorably above other less extreme measures, such as the application of continued cold to the abdomen or over the region of the heart. Indeed, I have seen such excellent results from such applications of cold that it would never occur to me now to return to venesection for reducing fever-heat, however high it might be, or however urgent the condition of the patient.—*Asclepiad*, No. 26.

Dilatation Instead of the Support of the Perineum.—Mr. H. E. Trestrail.—The dread of the perineum becoming ruptured during the passage of the child's head led to the practice of supporting it, and this has been more or less done from time immemorial to the present day. A large midwifery experience convinced me many years ago of the fallacy and danger of this practice; and in a paper read before the Obstetrical Society of London, and published in their Transactions of 1875, I recommended a diametrically opposite line of treatment, which is certainly followed by far better results. Let us consider for a moment the object we have in view, namely: We want the soft parts of the outlet of the pelvis to dilate, so as to allow of the passage of the child's head without its weakest part rupturing. What does support do? It presses the perineum between the hand on one side and the child's head on the other, so that the more support we give the more squeezed, thinned out, and lengthened the perineum becomes. No wonder, then, that it frequently gives way. One can hardly imagine anything so likely to favor a rupture as this pressure on both sides. True, the support may delay the advance of the head, but this pressure against the perineum rouses the uterus and makes the pains more violent, so that, if delay is the object sought, direct pressure upon the child's head is infinitely preferable, and safer in every way. In cases of ruptured perineum what has occurred? Either the outlet was abnormally unyielding, or there was not time for it to expand, so that the weakest part gave way. The obvious way of preventing this unfortunate result is to dilate the perineum before the child's head reaches it, and practically this is easily effected. One can readily form an opinion as to the necessity for this proceeding by ascertaining the dilatability of the parts, the size of the outlet, the length of the perineum, and the character of the pains. If there is reason to believe that the parts will not readily yield to the advancing head, they may be gradually dilated by drawing back and expanding the perineum during each pain, first with two and then with three fingers, and keeping up as firm extension as can be borne short of pain, and continued from time to time until the required amount of dilatation has been obtained. By this simple proceeding (1) the pains are strengthened; (2) the latter part of labor is materially shortened, and is far less painful; (3) the perineum is preserved intact.—*N. Y. Med. Abstract*, July, 1890.

Oxalic-Acid Poisoning.—R. B. W., aged 45 took with suicidal intent about an ounce of oxalic acid on June 16, 1890. About half an hour after he was admitted into ward 11, under Dr. Ross. Vomiting had set in promptly. There was great distress, constant vomiting, and burning pain in the throat and epigastrium; great difficulty in swallowing, owing to pain and the swollen state of the parts, which, added to a determination not to take any antidote, rendered the giving of a mixture of chalk and milk a matter of some trouble. A little was swallowed at intervals for an hour, and at each time excessive efforts at vomiting were provoked. The vomited matters were scanty, stained brown in streaks, but after the chalk was swallowed their characters were lost. Shortly after admission there was semi-unconsciousness, from which he could be aroused by the voice or by shaking. He then behaved in a startled, excited manner, becoming delirious, calling on his children by name to bring him water to quench his excessive thirst. His pulse at this time was very shabby, and an enema of brandy was given with good results. This was repeated every twenty minutes for an hour, by which time his pulse had recovered. An hour after admission he suddenly complained of severe burning pain in the hands, and wished them bathed in cold water. Shortly after this his eyes felt as if burning hot; then his forehead and feet felt hot. These symptoms subsided in about an hour. After the third enema of brandy he had a loose stool, but there was no repetition of it. In addition to these nervous symptoms he had four distinct epileptiform convulsions inside of the first hour, each of about two minutes' duration. At 4 P.M. the vomiting had lessened considerably in frequency; the burning sensations

had ceased; there was no recurrence of convulsions; but the patient was restless and excitable. There was great thirst and much pain in the throat and abdomen. A hypodermic injection of fifteen minims of Battley's solution of opium was given and afforded much relief. At 6 P.M. he was still vomiting a little, there was no diarrhœa, and he could swallow, but with great difficulty, a little soda-water. The pulse was again getting weak, and another enema of one ounce of brandy was given. The patient passed a restless and sleepless night, with occasional vomiting. He complained this morning (June 17th) of great pain in the throat, behind the sternum, and in the epigastrium. He can swallow much better, and is now taking milk and soda-water. A powder of bismuth and soda with half a grain of opium lessened the epigastric pain shortly after the first dose. He is still vomiting occasionally, but there is no delirium or diarrhœa; he talks rationally, but is hoarse; and his pulse is keeping strong without the aid of stimulants.

From this time on the case progressed favorably; the vomiting ceased, the pain and swelling in the throat lessened, swallowing became easy, and patient was discharged on the twelfth day after having been on solid food for three days. But he still had some tenderness on pressure in the epigastrium. During his first six days in hospital he had six short epileptiform attacks, including the three he had the first day. The patient naturally is of an irritable disposition, a rather heavy drinker, and is said to be subject to epileptic fits, but rarely has more than one in a year.

TRANSLUMINATION OF THE LARYNX AND OF THE ANTRUM OF HIGHMORE.—Dr. W. Freudenthal read a paper (New York Academy of Medicine) explanatory of this procedure. The subject, he said, had engaged the attention of laryngologists for the past year, and it was to be deplored that the founder of the method, Professor Voltolini, had died before its perfection. In describing the process, Dr. Freudenthal said that to get a view of the interior of the larynx the lamp was applied to the external surface of the neck, either at the pomum Adami or near the cricoid cartilage; the laryngoscopic mirror was passed into the dark pharynx, when a distinct view was readily obtained. The appearance was very different from that ordinarily seen, the whole larynx showing a reddish tint. With the lamp at the level of the incisura thyreoidea, the vocal bands and all parts above them appeared to be of a bright-red color, the epiglottis dark. With the lamp near the cricoid cartilage a very satisfactory view of the whole subglottic region down to the bifurcation of the trachea was obtained. What in ordinary illumination impressed one as a thickening or enlargement would in translumination appear as a dark object, which the rays of light had been unable to penetrate. For this reason the method offered great advantages in the defining of tumors, the dark outlines being clearly distinguished from the other parts brought into view. It was easy to be seen how in certain cases the diagnosis could be rendered comparatively certain by this method between a solid tumor and a cyst. The method was also very valuable in ascertaining the extent of ulcerative processes and other pathological conditions in the larynx, such as the difference between an œdematous vocal band and an infiltrated one. For the purpose of diagnosticating diseases of the antrum of Highmore and the nose, a small lamp was taken into the mouth, which caused illumination of the whole face. The nose could be thoroughly explored with this light, and if any growths were present they would be brought into view in the same manner as the intra-laryngeal growths. In the normal condition the nasal floor was permeable to the rays of light; if this should, however, remain dark and the nasal cavity was clear, it would be reasonable to conclude that there must be a body in the antrum which cut off the rays; this might be either pus or a solid tumor. The presence of hypertrophied turbinated bodies did not seem to interfere with translumination. In several cases in which the hypertrophies were marked the speaker had been able to accomplish perfect illumination. The non-appearance of light, even after thoroughly removing all visible obstacles from the nose, was such an important symptom that by it an almost absolute diagnosis of empyema of the antrum could be made. In most of these cases there would be no difficulty in making a diagnosis at any time, but in a certain number the most experienced diagnosticians were sometimes in doubt. It was in this class that the translumination would be of permanent value. As to the technique of the examination, he explained that for the exploration of the antrum an absolutely dark room was necessary, but not so for the larynx.

To prevent breaking the lamp, as frequently happened, the use of the rheostat was advised. It was always well to see that the patient had removed any artificial-tooth plate before examination, for it might lead to mistake in diagnosis if this precaution was not taken.

The speaker then gave a series of practical demonstrations of the working of the illuminating process which left no doubt as to its utility for covering many requirements in diagnosis.—*N. Y. Med. Jour.; Memphis Med. Monthly*, July, 1890.

PRACTICAL NOTES ON THE ACTION OF SULPHONAL.—In the Therapeutische Monatshefte for March, Dr. Franz, of Breslau, says: Perti-

nently to the researches of Dr. Knoblauch concerning the effect of sulphonal in diseases of the mind (Therap. Monatsh., 1889, page 495), I may briefly relate here my own experiments upon the operation of sulphonal in surgical diseases. I have administered sulphonal-Bayer to 82 patients, in about 260 doses, and from these experiments, which were made to learn what injurious collateral effects sulphonal might have, have reached very favorable conclusions. In the cases in which only an agrypnia nervosa had to be dealt with, comprising 26 patients and 86 doses, sulphonal failed me only four times, and those all with the same patient. This patient was very anæmic, had pulmonary phthisis, and had been operated upon several times for tubercular abscess. The patient declared, besides, that he could not sleep without morphine. In all the other cases the patients slept very well after sulphonal; and the sleep was, according to their representations, beneficial and refreshing. In no case had the patients any trouble from sulphonal; they did not complain of dizziness, or staggering, or headache, nor did any ataxic symptoms appear. Only the single patient (a morphine-taker), already mentioned, once had, after a dose of 3 grammes of sulphonal, somewhat marked delirium; otherwise he had no trouble. In one case we succeeded in weaning a moderate morphinomaniac from his habit by sulphonal. The maximum dose was in most cases 1 gramme. Somewhat larger doses had to be taken by patients who were suffering pain from wounds or other causes; with them a dose of 2 grammes was sufficient to produce in a short time healthful sleep. Only in 5 cases did sulphonal fail to remove violent pains, and then, indeed, in doses of only a drachm. In 1 case the pains of a violent supra-orbital neuralgia (following a phlegmon of the left half of the face) ceased after the administration of a gramme of sulphonal; with another patient toothache disappeared after giving sulphonal. In all these cases no headache, dizziness, ataxia, or other collateral symptom appeared.

Sulphonal also agreed well with all patients when given immediately after narcosis with chloroform. The pains, headaches, and vomittings that accompany the narcosis were not increased by it. No inconveniences followed the sulphonal; the numbness and the heaviness of the head after chloroform were in no case increased, but in many cases ceased. Sleep during the night following the operation was relatively not so good as in the other cases; but only 3 of the patients were unable to sleep; in the other cases the sleep was light and sometimes broken, but was otherwise generally good. Several patients averred that they slept better after sulphonal than after morphine, which was given them alternately with it.

Sulphonal had a marked effect with children, to whom it was given in 17 cases in doses of from 5 to 8 centigrammes. Sound sleep soon came on, without any unfavorable symptoms being induced.

When did the effect of sulphonal appear? I must first remark that no patient who took sulphonal between 2 and 4 o'clock in the afternoon slept during the day, or till evening. In the other cases sulphonal was given between 6 and 8 o'clock in the evening, and sleep came on in the case of patients with agrypnia nervosa in the course of an hour, while with those who had violent pains or were still under the influence of chloroform, it usually held off somewhat longer. In a few cases a sound and healthy sleep did not set in till toward morning. I should mention that the sulphonal in all the experiments was given in wafers, so that the difficult solubility of the sulphonal may be responsible for the delay in the patients' going to sleep.—*Jour. Amer. Med. Asso.*

A Fitting Tribute to a Skilled and Faithful Doctor.—The public testimonials to the work of physicians and surgeons are so few that such as occur are worthy of mention. By the hundreds doctors die yearly from service rendered in rescuing the disabled and restoring them to health. Some, like Dr. Douglas the physician of the late General Grant, are doomed to suffer at once the pangs of acute sickness, paralysis, and poverty. But by far the greater number are never heard of outside their immediate neighborhood. To the surgeon that accompanied Stanley on his African explorations is given a more pleasing fate. In health he returns to his native land. Nobility and royalty as well as his medical brethren vie with each other in honoring him. His chief, Mr. Stanley, speaks of him in the following terms:—

"Surgeon T. H. Park was the latest of our volunteer officers who applied for membership in the expedition. He wrote with his own hand the terms of agreement, the most comprehensive being 'loyal and devoted service' gratuitously. For some months he pursues his duties without attracting much notice from me; he is so quiet and unobtrusive. Finally the increasing distresses to which we are subject increases the sick list alarmingly. I am obliged to attend personally to the matter, which brings me more in contact with the doctor, and gives me better opportunities of observing his manner of work. Splinters pierce the feet through and through, ulcers break out like an epidemic, nostalgia creates a chronic sinking of the vital powers, hunger weakens them, dysentery saps their strength, fevers enfeeble them and various accidents

occur, and each has its victims. Natives wound with arrows, knives, and spears, and before many months I find nearly all the men pass under the doctor's hands. His patients vary from twenty to fifty daily; for once anæmia has a firm hold upon the constitutions, and the circumstances which caused the sickness remaining unaltered, except to pass from bad to worse. The doctor's task never lessens. For months he has devoted his skill, his time, patiently and uncomplainingly, and always with a charming interest in his cases, until I have at least one hundred and twenty-four, a full one-third of the expedition, unfit for further travel. I call the doctor and explain to him and say: You have done well, I admit; but I wish yet more if possible. Take these one hundred and twenty-four and cure them. How you will do it I do not know; but come this once. Every hour of the day give to them, see that their terrible wounds are dressed, that they have rations regularly, that their food is cooked, etc. Though they were a terrible sight when I left them to his charge, in one month over eighty were in prime condition and fit for active service, and a few weeks later only five remain incurably sick.

"From February 16th to March 26th I was in peril of my life from a large abscess and an attack of subacute gastritis; I could not partake of food and could not serve myself from weakness. Had I been alone I should have surely died, for the servants could never have treated a sick man to whom food was to be denied. The sickness was repeated ten months later, wherein the stomach was so inflamed that life was not possible without strong hypodermic injections of morphine. But through both painful seasons Dr. Parke's skill and nursing carried me through triumphantly.

"When the Egyptian refugees from the Province joined us Surgeon Parke's duties increased. Every afternoon he called his patients about him, and all forms of hateful disease were treated with remarkable consideration and sweet patience. Every white officer in the expedition, Emin Pasha, Captain Casati, and the Egyptian officers are indebted to him; and finally, after thirty-four months of noble work, he has the sad office of administering to the necessities of Emin Pasha after his terrible fall, and after twenty days of unremitting attention to him, he is prostrated and conveyed to the French Hospital at Zanzibar, where his state becomes so critical that Dr. Charlesworth begs me to hasten to him before it is too late."

We do not quote this because such service is uncommon from physicians, but because the manly recognition of it by the great explorer is worthy of attention.—*Amer. Lancet*, August, 1890.

BOOK REVIEWS.

The Medical and Dental Register-Directory and Intelligencer of Pennsylvania and Delaware. Edited by WILLIAM B. ATKINSON, A.M., M.D. Philadelphia: George Keil, 1890.

This publication contains the names and locations of the physicians and dentists of two States, together with the dates and schools of their graduation. Much useful information relating to medical societies, colleges, hospitals, dispensaries, etc., is also to be found in its pages.

A Compend of Equine Anatomy and Physiology. By WILLIAM R. BALLOU, M.D. With 29 illustrations. Quiz Compends, No. 12. Philadelphia: P. Blakiston, Son & Co., 1890.

The anatomy and physiology of the horse are briefly sketched by the author of this volume, following, in the main, Chauveau, R. Meade Smith, and Jeffrey Bell, on anatomy. The book is too small to be much more than a catalogue of anatomical parts, while the "compend" of physiology necessarily consists of a series of bald statements interspersed with a number of tables of chemical composition, etc. It is no reflection upon Dr. Ballou to say that he has found it difficult to epitomize anatomy and physiology in so narrow a compass.

Essentials of Anatomy and Manual of Practical Dissection, together with the Anatomy of the Viscera. By CHARLES B. NANCREDE, M.D. Third edition, revised and enlarged. Philadelphia: W. B. Saunders, 1890.

This is a considerably larger book than most of its congeners. The author is well known as a teacher of anatomy, and has prepared a concise description of the human body. The main facts of anatomy are clearly stated, and questions and answers are arranged in such an order as to render the work useful in review study or for purposes of reference. Its value is very materially enhanced by a series of beautiful plates, chiefly illustrating the vascular system, the arteries and veins being colored red and blue, respectively.

Essentials of Diseases of the Eye, Nose, and Throat. Part I, The Eye, by EDWARD JACKSON, A.M., M.D.; Part II, The Nose and Throat, by E. BALDWIN GLEASON, S.B., M.D. Saunders' Question Compends, No. 14. With 118 illustrations. Philadelphia: W. B. Saunders, 1890.

The utility of works of this kind is open to serious question. Certainly, a medical student should never place much dependence upon them, though for the purpose of rapid review, either for quizzing or final examination, they may aid in fixing main points in the memory. Within the narrow limits allowed, the writers have executed

their tasks as well as possible, condensing the principles of optics, the symptoms and treatment of disease, and the mode of using the laryngoscope in a very compact and intelligible little manual.

Lymphatiques des Organes génitaux de la Femme. Par le DR. PAUL POIRIER, Professeur agregé, etc. Paris: E. Lecrosnier & Babé, 1890.

Lymphatics of the Female Genital System. By DR. PAUL POIRIER. Paris: E. Lecrosnier & Babé, 1890.

This monograph, reprinted from Le Progrès Médical, and dedicated to the illustrious Professor Sappey, treats of a very important subject not only to anatomists, but also to gynæcologists and general practitioners. It has grown out of the fact that this topic was assigned to the author as his subject in the *concours* for the position of *chef des travaux anatomiques*, which he now occupies. In its preparation he has injected and dissected the lymphatics in more than 300 subjects of all ages. The author, in preparing his material, employed mercurial injections after the method of Professor Sappey. The course of the absorbent vessels of the vagina having been described, those of the uterus are next considered as they exist in the mucous membrane of the neck and of the body, in the muscular substance of the organ and in its serous covering. The cords of absorbent vessels form a thick mesh upon the outer surface of the womb. "The extreme abundance of lymph-conduits in the ovaries," says Professor Sappey, "is one of the most characteristic features of their structure." No organ in the body can be compared to the ovary in this respect. Adhesions of greater or less extent were usually found, especially upon the posterior surface of the womb. Most of these adhesions contained but few blood-vessels. They were, however, almost entirely composed of a wonderful net-work of lymphatics prolonged from that of the peritoneal covering of the uterus. The relation of this fact to the spread of septic processes is obvious. The pamphlet is brought to a close with the discussion of the pathogenesis of inflammation of the pelvic peritoneum, the tubes, and the ovaries.

Chronic Urethritis and Other Affections of the Genito-Urinary Organs. Three Lectures, delivered at the Royal College of Surgeons in June, 1889. By MATTHEW BERKELEY HILL, M.B. Lond., F.R.C.S. London: H. K. Lewis, 1890.

In the first lecture, after describing the appearance and expansibility of the healthy urethra, the author discusses the morbid changes produced by urethritis, the symptoms and some of the consequences of chronic inflammation of the canal. He then touches upon the important question, How long is a gleety discharge contagious? He believes that we know too little of the gonococcus to be justified in asserting that, if that organism be absent, the discharge is therefore harmless. No precise rule can be formulated, but he is inclined to think that if the discharge be furnished entirely by granular patches, and not by the crypts and ducts of glands, it is incapable of communicating disease. But, since it is difficult or impossible to verify this belief, the only certainty is to forbid sexual intercourse until the gleet is cured. The second lecture, devoted to the treatment of chronic urethritis, is based upon a comparative study of the results of different modes of treatment in 110 cases. Fifty patients had soluble bougies as part or the whole of their treatment. Of this number 10 were cured, the sulphate and the chloride of zinc being the most effective remedies. Thallin proved irritant, and cured none in whom it was used. The permanganate-of-zinc injection, in the average strength of 1 grain to 8 ounces of water, was very serviceable, and the author prefers it to the sulphate or sulphocarbolate of zinc. If used much stronger it proves hurtful. In the later stages, he is fond of a compound injection consisting of 30 to 40 grains of sulphate of zinc, the same quantity of alum, 20 grains of sulphate of iron, and 2 grains of the sulphate of copper in 8 ounces of water. Inflamed patches are benefited by instillations of nitrate of silver directly upon the diseased spot by means of a suitable catheter and syringe. A solution of 5 to 10 grains to the ounce may be used at first, and the strength gradually increased to 20 to 25 grains to the ounce. From 5 to 10 minims should be dropped upon the spot, and repeated in a few days until the gleet disappears. A 10-per-cent. injection of cocaine is very valuable when micturition is painful. Asparagus is usually considered harmful; but the author found that, while in some persons it increased the discharge, in others it was entirely without effect. Coffee aggravates the local conditions. No advantage was derived by the writer from the administration of kava-kava. In chronic urethritis of the penile portion he has made his treatment almost entirely local. He has found copaiba, sandal-wood, and cubebs more apt to excite indigestion than to cure the urethritis. But, in the prostatic portion, cubebs certainly, probably sandal-wood, buchu, and copaiba, are valuable adjuncts to local remedies. He considers that the most effectual method of treatment is by means of the endoscopic tube. But we shall have to refer our readers to the work itself for a description of this method in detail. He has very little to say about the use of bougies. Chapter III is devoted to chronic prostatitis and its treatment, and the work closes with a brief account of tubercle of the prostate.

CURRENT MEDICAL LITERATURE.

The Johns Hopkins Hospital Bulletin.

Dosimetry in Colorado. By J. E. MacNeill, M.D., Denver, Col.

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Electricity in Gynecology: The Galvanic Apparatus. By C. N. Smith, M.D., Toledo, Ohio.

The New Treatment of Peritonitis. Lanphear. Reprint from Kansas City Medical Index, July, 1890.

Cholecystotomy. By Edward Rickets, M.D., Cincinnati, Ohio. From the Pittsburgh Medical Review, May, 1890.

Restriction and Prevention of Diphtheria. Document issued by the Michigan State Board of Health. Ninth edition, 10,000 printed, June, 1890.

A Successful Case of Nephrectomy. By George Ben. Johnston, M.D., Richmond, Va. Reprinted from Virginia Medical Monthly, July, 1890.

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Addresses Commemorative of James L. Cabell, delivered at the University of Virginia, July 1, 1890. Published by the Faculty. Charlottesville, Va., 1890.

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First Report of the National Executive Silver Committeee, appointed at the St. Louis Convention, November, 1890. By the Executive Committee, July, 1890. Washington, D.C., 1890.

The Use and Abuse of Soap and Water. By B. Merrill Ricketts, M.D., Cincinnati, Ohio. Reprinted from the Journal of Cutaneous and Genito-Urinary Diseases for May, 1890.

A Classification of Intra-Nasal and Naso-Pharyngeal Diseases. By Lennox Browne, F.R.C.S., Ed. Reprinted from the Journal of Laryngology and Rhinology. London, 1890.

Programm für den X Internationalen Medicinischen Congress zu Berlin. August 4–9, 1890.

Five Cases of Vaginal Hystorectomy for Malignant Disease of the Uterus, All Recovered. By W. F. McNutt, M.D., L.R.C.P., Ed., etc. Reprinted from Transactions of the Medical Society, State of California, 1890.

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What is the Present Medico-Legal Status of the Abdominal Surgeon? By William Warren Potter, M.D., Buffalo, N. Y. Reprinted from the American Journal of Obstetrics and Diseases of Women and Children, No. XXIII, No. 7, 1890. New York, 1890.

External Surgery of the Nose. By B. Merrill Ricketts, Ph.B., M.D. Read in the Section on Surgery at the Forty-first Annual Meeting of the American Medical Association, May, 1890. Reprinted from the Journal of the American Medical Association, June 21, 1890. Chicago, 1890.

Transactions of the American Dermatological Association at its Thirteenth Annual Meeting, held at the Boston Medical Library, Boston, Mass., on the 17th, 18th, and 19th of September, 1889. Official Report of the Proceedings by the Secretary, George H. Tilden, M.D. New York, 1889.

The Post-Graduate: the Journal of the New York Post-Graduate Medical School and Hospital, containing its Ninth Annual Announcement and a list of the Matriculates. Edited by William Oliver Moore, M.D., and Seneca D. Powell, M.D., Executive Committee of the Clinical Society. July, 1890.

Functional Nervous Diseases of Reflex Origin. By Albert Rufus Baker, M.D. Read in the Section of Ophthalmology at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May 21, 1890. Reprinted from the Journal of the American Medical Association, July 12, 1890. Chicago, 1890.

Reformation in the Practice of Medicine by the Dosimetric Method of Practice: or, the Method of Small Doses of the Active Principles of Plants, Mathematically Measured and Scientifically Adapted to the Varied Abnormal Conditions. With Biographical Sketch of Dr. Ad. Burggraeve. By J. E. MacNeill, M.D. Revised and Reprinted from the Dosimetric Medical Review. New York, July, 1889.

COMMERCIAL NEWS.

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Index to Advertisements.

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